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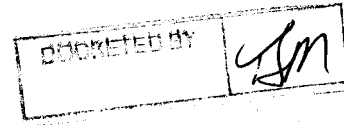
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Transcript Exhibit(s)



Docket #(s): E-01345A-10-0394

E-01345A-12-0290

E-01333A-12-0296

E-04204A-12-0297

Exhibit # SI-S5, RUC01-RUC04, WRA1-WRA3

TEP1-TEP3, APS1, Vote Solar1, SETA1 -

SETA2, Wal-Mart1, Walmart2

DOD/FEA1 - DOD/FEA4, NRG1 NRG2



BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP

Chairman

GARY PIERCE

Commissioner

BRENDA BURNS

Commissioner

BOB BURNS

Commissioner

SUSAN BITTER SMITH

Commissioner

IN THE MATTER OF ARIZONA PUBLIC)
SERVICE COMPANY REQUEST FOR)
APPROVAL OF UPDATED GREEN POWER)
RATE SCHEDULE GPS-1, GPS-2, AND GPS-3)

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
APPROVAL OF ITS 2013 RENEWABLE)
ENERGY STANDARD IMPEMETATION FOR)
RESET OF RENEWABLE ENERGY ADJUSTOR)

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF)
TUCSON ELECTRIC POWER COMPANY FOR)
APPROVAL OF ITS 2013 RENEWABLE)
ENERGY STANDAR IMPLEMENTATION)
PLAN AND DISTRIBUTED ENERGY)
ADMINISTRATIVE PLAN AND REQUEST FOR)
RESET OF ITS RENEWABLE ENERGY)
ADJUSTOR)

DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF)
UNS ELECTRIC, INC. FOR APPROVAL OF ITS)
2013 RENEWABLE ENERGY STANDARD)
IMPLEMENTATION PLAN AND DISTRIBUTED)
ENERGY ADMINISTRATIVE PLAN AND)
REQUEST FOR RESET OF ITS RENEWABLE)
ENERGY ADJUSTOR)

DOCKET NO. E-04204A-12-0297

DIRECT
TESTIMONY
OF
ROBERT G. GRAY
EXECUTIVE CONSULTANT III
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

APRIL 24, 2013

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EXECUTIVE SUMMARY
ARIZONA PUBLIC SERVICE COMPANY, ET AL
DOCKET NOS. E-01345A-10-0394, ET AL

My testimony in this proceeding provides Staff's perspectives and recommendations regarding how the Commission should treat distributed energy for purposes of determining whether jurisdictional utilities are in compliance with the REST rules. Staff previously recommended adoption of a track and record methodology. Staff is now recommending a modification of its previous track and record proposal, which it is now calling Track and Monitor.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Robert G. Gray. I am an Executive Consultant III employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as an Executive Consultant III.

A. In my capacity as an Executive Consultant III, I conduct analysis and provide recommendations to the Commission on a variety of electricity, natural gas, and water/wastewater matters. A copy of my resume is attached as Exhibit RGG-1.

Q. What is the scope of this testimony?

A. My testimony provides Staff's perspectives and recommendations regarding how the Commission should treat distributed energy for purposes of determining whether jurisdictional utilities are in compliance with the Renewable Energy Standard and Tariff ("REST") rules.

Q. Have you reviewed the testimony of Arizona Public Service Company Witness Gregory L. Bernosky and Tucson Electric Power Company/UNS Electric Inc. Witness Carmine Tilghman?

A. Yes. I have reviewed their testimony and will discuss their recommendations as part of my testimony.

1 **BACKGROUND**

2 **Q. Please discuss the background of this proceeding.**

3 A. The immediate reason for this testimony is that in the Commission's orders approving the
4 Arizona Public Service Company ("APS"), Tucson Electric Power Company ("TEP"), and
5 UNS Electric, Inc. ("UNS") 2013 REST plans, the Commission ordered that a hearing be
6 held and a Recommended Opinion and Order ("ROO") be prepared for Commission
7 consideration on the track and record proposal and alternatives. The Commission further
8 ordered that the ROO in this proceeding should evaluate whether adoption of track and
9 record or alternatives would require modifications to the REST rules. On March 29, 2013,
10 APS and TEP/UNS filed testimony providing their perspectives and proposals for how
11 they should achieve compliance with the REST rules in future years if/when at least some
12 incentive levels reach zero.

13
14 More broadly speaking, there has been a gradual realization in recent years that as
15 incentives for distributed energy ("DE") continued to decline, a time could come in the
16 near term future when utilities would no longer need to offer direct incentives for DE
17 installations to take place within their service territories. Traditionally when utilities
18 offered direct incentives for DE installations, a transaction took place where the utility
19 provided the incentive to a customer and the utility received the renewable energy credit
20 ("REC") in return. Utilities then used the RECs to achieve compliance under the REST
21 rules which require the utility to meet a growing percentage of its electricity needs via
22 renewable energy resources, culminating in a 15 percent standard in 2025. However, this
23 transaction breaks down once a utility no longer offers a direct incentive or offers a direct
24 incentive sufficiently small that at least some customers would decline to request the
25 incentive from the utility. In these situations, the customer no longer would be providing
26 the RECs to the utility in return for the incentive payment. Thus, the REST rules, as

1 currently formulated, do not provide a clear pathway for utilities to demonstrate
2 compliance with the REST standard in an environment where DE incentives are no longer
3 offered or are small enough that some customers do not take them. The REST rules are
4 premised on measuring the percent of a utility's load it is meeting with renewable
5 resources. To the extent renewable resources are installed in their service territory and are
6 not accounted for in some manner, the REST compliance reports will fail to reflect reality,
7 ie., a higher percent of electric load will be served with renewable energy than is reported.
8

9 APS, TEP and UNS recognized this issue when they filed their proposed 2013 REST
10 plans with the Commission on June 29, 2012 (APS) and July 2, 2012 (TEP and UNS).
11 APS' proposed 2013 REST plan specifically proposed adoption of a track and record
12 method for DE compliance, whereby APS would meter all DE production that is
13 interconnected with APS' system for REST compliance, without acquiring RECs from
14 those customers. TEP's and UNS' proposed 2013 REST plans both requested guidance
15 from the Commission on how to demonstrate REST compliance in a post-incentive time
16 and put forth four options for consideration:
17

18 "1. Change or waive the existing Resource Portfolio Standard ("RPS") to eliminate
19 either the DG requirement, or the requirement to retire RECs associated with the
20 customer-sited distributed generation system and allow the utility to report metered
21 production data in order to show the percentage of sales associated with renewable
22 energy.
23

24 2. Allow utilities to modify their existing net-metering tariffs to require customers to
25 surrender all credits and environmental attributes in exchange for net-metering.
26

27 3. Allow utilities to meet the RPS DG requirement by showing a percentage of their
28 sales through metered data without the requirement of retiring REC's (and without
29 altering the existing rules).
30

31 4. In the absence of existing rule changes, allow the utilities to request waivers for
32 meeting the DG requirement through the use of REC retirement and allow the utility
33 to show compliance in an alternative manner."

1 TEP's proposed 2013 REST plan notes that this issue was already coming to fruition in
2 TEP's service territory, as TEP already had over 4 megawatts ("MW") of DE installations
3 as of July 2012 that had not taken incentives from TEP.
4

5 On October 18, 2012, Staff filed its Staff reports on the proposed APS, TEP, and UNS
6 2013 REST plans. In all three Staff reports, Staff recommended adoption of the track and
7 record method of determining DE compliance with the REST rules. A number of entities
8 filed comments in the APS and TEP proceedings, proposing various possible alternatives
9 to the track and record proposal. These events led to the Commission ordering this current
10 proceeding.
11

12 **Q. Please discuss some of the proposals made by APS and TEP/UNS in their March 29,**
13 **2013 testimony?**

14 A. One solution proposed by APS and TEP would be to eliminate the DE set-aside from the
15 REST rules, with a temporary waiver of the DE set-aside while the Commission would
16 amend the REST rules to remove the requirement. They further propose that the 15
17 percent REST requirement remain intact, even with elimination of the DE set-aside.
18

19 **Q. Please provide Staff's perspective on this proposal.**

20 A. Staff does not support this proposal for several reasons. First, while parties may debate
21 the merits of adopting a DE set-aside in the first instance, the proposal to remove it would
22 clearly be a substantive change to the Commission's policy decision to codify the DE set-
23 aside in the REST rules. Second, removal of the DE set-aside would not address Staff's
24 desire to have REST compliance reports reflect reality concerning how much electric load
25 is being served by renewable energy. Even if the DE set-aside were removed, some
26 amount of DE will continue to be installed, giving rise to the same issue that we are trying

1 to resolve in this proceeding: how should the Commission treat that distributed energy for
2 purposes of assessing compliance with the REST rules?

3
4 Third, this proposal would result in a *de facto* increase of the REST rules' 15 percent
5 renewable energy requirement. The amount of the increase would depend on the amount
6 of additional DE that is installed without a utility incentive. None of this additional
7 energy could be used towards meeting the 15 percent requirement.

8
9 Finally, removing the DE set-aside would not reduce the number of carve-outs from the
10 REST rules, it would simply replace the existing 4.5 percent DE carve-out, with
11 something approaching a 15 percent utility scale carve out. Currently, of the 15 percent
12 REST requirement in 2025, 4.5 percent must be met by DE. Under the utilities' proposal,
13 the 4.5 percent reservation for DE is eliminated, and thus the utility scale component
14 would have to make up the difference, requiring something close to the full 15 percent
15 (taking into account some amount of residual DE RECs the utilities have already acquired
16 or will acquire). Given the current much higher direct cost recovered through the REST
17 surcharge of utility scale generation in comparison to the low level of DE incentives that
18 has been offered recently, such an expansion of the utility scale component could
19 significantly increase utility REST budgets in future years and therefore the costs
20 recovered from ratepayers through the REST surcharge.

21
22 **Q. APS indicates it considered several other options and TEP/UNS identifies several**
23 **short term alternatives. What were these alternatives and options?**

24 **A.** They included tying RECs to all utility interconnections, tying RECs to net metering,
25 eliminating the DE requirement while reducing the overall REST requirement to 10.5
26 percent, and a variation of track and record where the REST requirement would be

1 reduced to reflect production from energy systems where no REC transfer to the utility
2 takes place.

3
4 **Q. What were the primary goals considered by Staff in formulating its position in this**
5 **proceeding?**

6 **A. While there are many considerations in evaluating how compliance under the REST rules**
7 **should be achieved in a setting where there is little if any incentive money offered for DE**
8 **installations, the following goals were the most important considerations to Staff:**

- 9
10 1. Provide a clear and easily documented way for utilities to achieve compliance
11 under the REST rules;
12
13 2. Recognize reality regarding how much electric load is actually being met with
14 renewable energy;
15
16 3. Minimize the cost to ratepayers;
17
18 4. Maximize value to the extent possible for those who undertake DE installations
19 and Arizona as a whole; and
20
21 5. Be minimally invasive to the REST rules.

22
23 **Q. Given developments to date, does Staff continue to support the track and record type**
24 **method that was contained in the Staff Reports on the utilities' 2013 REST plans**
25 **filed by Staff in October 2012?**

26 **A. Yes, Staff continues to believe that a form of track and record is the best solution for the**
27 **Commission to adopt in this proceeding. However, taking into consideration input from**
28 **interested entities and the utilities, Staff now supports a modified form of track and record,**
29 **rather than the form of track and record it supported in the October 2012 Staff Reports.**

1 **Q. Please describe the modified form of track and record Staff now supports.**

2 A. The modified form of track and record Staff now supports, what Staff will refer to as
3 "Track and Monitor", would be based on an alternative contained in TEP/UNS' March 29,
4 2013 testimony. Under this alternative, where Track and Monitor would be used, the
5 REST requirement would be reduced for each utility, on a kWh per kWh basis, for all DE
6 that is produced in their service territory where no REC transfer to the utility takes place.

7
8 **Q. How does Track and Monitor meet Staff's goal of providing a clear and easily**
9 **documented way for utilities to achieve compliance under the rest rules?**

10 A. The utilities will have, or will shortly have, production meters on all interconnected DE
11 facilities in their service territory and will know which DE facilities have involved a REC
12 transfer to the utility or not. Thus the utilities will know exactly how much production has
13 taken place from all DE facilities. With this knowledge they will know whether the DE
14 component in the REST rules will be reduced enough by DE facilities that did not transfer
15 their RECs to the utility in a given year so that their compliance requirements under the
16 REST rules are met, in conjunction with their utility scale production and any DE
17 production for which they still receive the RECs. Use of actual production information is
18 a clear and straightforward method to determine what is happening for each utility each
19 year under the REST rules.

20
21 **Q. How does Track and Monitor meet Staff's goal of recognizing reality regarding how**
22 **much electric load is being met with renewable energy?**

23 A. Track and Monitor fully captures DE generation activity in a given utility's service
24 territory, providing an accurate picture of how much renewable energy production is
25 taking place on an on-going basis. The Arizona renewable energy marketplace will have
26 accurate information on what is happening both within utility renewable energy programs

1 and with projects that are not part of a utility's REST compliance efforts. This was a
2 strength of the track and record proposal made by Staff in the October 2012 Staff Reports,
3 and it continues to be a strength of this current proposal. It is very straightforward to track
4 the actual metered production of renewable facilities.

5
6 **Q. How does Track and Monitor meet Staff's goal of minimizing the cost to ratepayers?**

7 **A.** The Track and Monitor proposal should not lead to any additional costs to ratepayers in
8 comparison to the current formulation of the REST requirement. It will actually lower
9 REST surcharge costs if DE deployments that do not take an incentive go beyond the 4.5
10 percent DE REST compliance floor and lower the 10.5 percent that must be met with
11 utility scale generation.

12
13 **Q. How does Track and Monitor meet Staff's goal of maximizing value to the extent
14 possible for those who undertake DE installations and Arizona as a whole?**

15 **A.** Under Track and Monitor, those who undertake DE installations without taking a utility
16 incentive would retain the rights to their RECs, unlike other options such as requiring an
17 exchange of RECs in order to interconnect with a utility or take net metering service from
18 a utility. A variety of renewable energy interests have expressed a desire to have owners
19 of DE systems maintain ownership of the RECs their systems produce.

20
21 Under Track and Monitor, owners of DE systems that do not take a utility incentive will
22 retain ownership of their RECs. They can use their RECs to meet their own renewable
23 energy goals or potentially even sell their RECs. Such sales would inevitably enhance
24 the economic equation for installing DE in Arizona and therefore would likely spur further
25 DE installations in Arizona. Such additional installations would not increase the REST
26 surcharge and could provide further opportunities for economic activity in Arizona.

1 A further benefit of Track and Monitor is that it resolves the issue of cases such as the
2 Veterans Administration ("VA") in Tucson, where there were potentially competing
3 claims for the RECs produced by renewable energy facilities that did not take an incentive
4 in TEP's service area, such as the VA facilities in Tucson. As noted in the VA's letter
5 docketed in TEP's 2013 REST plan docket on November 26, 2012, the VA expressed a
6 concern that the "vanilla" track and record proposal would allow TEP to claim RECs from
7 VA installations in the TEP service territory for which the VA took no incentives¹. The
8 VA believes that under such a scenario it could not use the RECs from such installations
9 to meet federal renewable energy goals and requirements. Use of Track and Monitor
10 would alleviate this issue for the VA and any other similar situations which could develop
11 within utility service territories in Arizona.

12
13 **Q. How does Track and Monitor meet Staff's goal of being minimally invasive to the**
14 **REST rules?**

15 **A.** Track and Monitor would only adjust the REST compliance requirements for production
16 from facilities that do not take an incentive and do not transfer their RECs to the utility.
17 This is less invasive than, for example, elimination of the DE portion of the rules. The
18 current carve-out for DE would be maintained under Track and Monitor. No new carve-
19 outs are created under the Track and Monitor proposal.

¹ See also November 26, 2012 letter from Department of Veterans Affairs filed I APS' RES docket claiming Track and Record would interfere with VA's ability to sell or claim solar generation from VA's facilities in Phoenix, Prescott and other portions of APS's service territory in Arizona. The VA stated that with Track and Record APS would have the ability to count any of VA's general RECs towards APS' own renewable energy requirements, VS cannot retain credit for RECs generated by VA facilities if they are counted towards another entities' RES requirements.

1 **Q. How does the Track and Monitor Proposal differ from APS's modified Track and**
2 **Record proposal contained in their Direct Testimony?**

3 **A. Under APS's modified track and record proposal, APS and other affected utilities would**
4 **no longer be required to obtain RECs from DE sources as contemplated in A.A.C. R-14-2-**
5 **1805. Customers installing DE would keep their RECs. But APS would track the energy**
6 **produced by DE installations through the continued deployment of DE production meters**
7 **and annually report the amount of that energy to the Commission for informational**
8 **purposes, rather than compliance purposes. The requirement that affected utilities acquire**
9 **a certain amount of RECs from DE would be eliminated. As discussed earlier, however,**
10 **Staff does not support elimination of the DE set-aside.**

11
12 **Q. How does Staff recommend the Commission implement the Track and Monitor**
13 **proposal within the context of the REST rules and the utilities' annual REST plan**
14 **filings?**

15 **A. Staff believes that initially the Commission should grant a waiver to the utilities to**
16 **implement Track and Monitor. Then, if Track and Monitor seems to be working well, the**
17 **Commission could consider amending the REST rules to reflect Track and Monitor on a**
18 **permanent basis. Staff anticipates that if Track and Monitor were approved by the**
19 **Commission in this proceeding and implemented with the utilities' 2014 REST plans, that**
20 **the utilities could report back to the Commission in their July 1, 2014 filings of their**
21 **proposed 2015 REST plans as to how Track and Monitor is working and if they believe**
22 **any adjustments need to be made.**

23
24 **Q. What specifically would this waiver do to the existing REST rules?**

25 **A. It would allow the utilities to adjust applicable REST requirements downward, on a kWh**
26 **per kWh basis, in a given compliance year to reflect production from facilities within their**

1 service territory that did not receive an incentive and did not transfer RECs to the utility.
2 Further, as I discuss below, utilities would not be penalized for not achieving the overall
3 REST requirement in a given year if they had been meeting it in previous years.
4

5 **Q. Would the Track and Monitor proposal avoid the problem noted by some**
6 **stakeholders that when incentives are at a low level, no recognition is given to the**
7 **fact that some customers are taking an incentive and transferring RECs to the utility**
8 **and some customers are not?**

9 **A.** Yes. All customers' production would be metered and they would either fall into the
10 category where the utility receives the RECs or they would fall into the category of
11 production facilities where no incentive is taken and no RECs are transferred to the utility.
12 But production from both categories would be accounted for, either toward meeting the
13 utility's REST compliance requirement or by reducing the utility's REST compliance
14 requirement.
15

16 **Q. Should the Commission adopt Track and Monitor even if utility incentives in certain**
17 **DE segments have not reached zero?**

18 **A.** Yes. From a practical standpoint, most direct incentives are at zero or are quite low at this
19 time and it is unclear exactly when they will reach zero, but it is likely to happen in the
20 near future in various utility service territories. So adopting Track and Monitor at this
21 time will avoid trying to synchronize adoption with the elimination of direct incentives at
22 some point, possibly mid-year, in the future. Further, various types of direct incentives
23 may reach zero at different times for a given utility. There is no downside to adopting
24 Track and Monitor sooner, rather than later.
25

1 And finally, utilities have noted that installations are taking place without taking an
2 incentive even when incentives still exist. For example, TEP's 2013 REST plan filing
3 noted that TEP had seen more than 4 MW of installations that had not taken an incentive
4 as of July 2012, with more expected to occur as incentives ramped down in 2012 and into
5 2013. Track and Monitor would provide a mechanism for accounting for those
6 installations in a marketplace where some customers are taking direct incentives and some
7 are not. Currently, those installations not taking a direct incentive fall between the cracks,
8 so to speak, of the current formulation of the REST rules. Yet, such installations certainly
9 do impact the extent to which the required percent of load within a given service territory
10 is being met with renewable energy resources and thus should somehow be reflected in
11 utility REST reporting, whether toward meeting the REST requirement under Track and
12 Monitor or toward reducing it.

13
14 **Q. Does anything in Staff's proposal impact the utility scale segment of the REST**
15 **requirement?**

16 **A.** No. Utilities would continue to meet their utility scale generation requirements under the
17 REST rules with the kWh from utility-owned renewable generation or purchased power
18 agreements with third party utility scale renewable generation, just as before.

19
20 **Q. Under Staff's Track and Monitor proposal, could a utility reduce its REST**
21 **requirement for the metered kWh production from a DE facility that is not taking an**
22 **incentive and then also acquire the RECs for those same kWhs from that production**
23 **facility to help meet its remaining REST requirements?**

24 **A.** No. Staff believes that if a utility recognizes a kWh produced by a DE facility to reduce
25 the REST requirement, then it should not be allowed to acquire the RECs from that
26 facility to meet its remaining REST requirement. This would violate the spirit of the

1 REST rules' intention to have 15 percent of retail electricity sales met through actual
2 renewable energy.

3
4 **Q. How does Staff anticipate the results of this proceeding be incorporated into future**
5 **REST filings by the utilities?**

6 **A.** It is unlikely that a decision will be available prior to the utilities filing their proposed
7 2014 REST plans on July 1, 2013, given that the hearing in this proceeding will begin in
8 early June 2013. However, it seems much more likely that a decision in this proceeding
9 may be issued in the late summer/ fall 2013 timeframe. In this case, Staff believes there
10 could be time for utilities to file revisions to their proposed 2014 REST plans to reflect the
11 results of this proceeding. The Commission would then be able to consider these
12 proposals as part of its deliberations over utilities' 2014 REST plans.

13
14 **Q. Under Track and Monitor, should a utility be penalized for falling short of the DE**
15 **portion of the REST requirement in a given year if it had been meeting the**
16 **requirement in past years?**

17 **A.** No. However, if a utility were falling significantly short of the DE portion of the REST
18 requirement in such a year, the Company would be expected to come before the
19 Commission in a timely fashion, such as in its next filing for approval of an annual REST
20 plan, to address the shortfall in some fashion, such as potentially reinstating a direct
21 incentive level to spur the market to a point where the utility would be back in compliance
22 in the following year.

23

1 **Q. If the DE market where no transfer of RECs to the utility take place slows down to a**
2 **point where a utility still has an outstanding portion of its DE requirement to comply**
3 **with, how would such a situation be addressed under the Staff proposal?**

4 **A. The utility, as is currently the case, would have the ability to come before the Commission**
5 **as part of its annual REST plan filing, or at another time of the utility's choosing, to**
6 **request a reinstatement of a direct incentive for given segment(s) of the DE market to spur**
7 **further DE installations to enable the utility to achieve compliance. Exhibit Two shows**
8 **three examples of the calculations that are made under different Track and Monitor**
9 **Scenarios.**

10

11 **Q. Does Staff's Track and Monitor proposal maintain the spirit of the REST rules,**
12 **which is to see 15 percent deployment of renewable resources within each utility**
13 **service territory in 2025?**

14 **A. Yes. While the formal compliance requirement would be reduced under Track and**
15 **Monitor to some level below 15 percent, the actual level of renewable energy in a given**
16 **utility's service territory in total, would tally to at least 15 percent. Therefore, Track and**
17 **Monitor would not result in any reduction in the amount of renewable energy being**
18 **deployed in a given utility's service territory through 2025, when utilities are supposed to**
19 **meet the 15 percent REST requirement.**

20

21 **Q. Does this conclude your direct testimony?**

22 **A. Yes, it does.**

RESUME**ROBERT G. GRAY****Education**

- B.A. Geography, University of Minnesota-Duluth (1988)
M.A. Geography, Arizona State University (1990) Thesis: *A Model for Optimizing the Federal Express Overnight Delivery Aircraft Network.*

Employment History

Arizona Corporation Commission, Utilities Division, Phoenix, Arizona: Executive Consultant III (November 2007 – present), Public Utility Analyst V (October 2001 – November 2007), Senior Economist (August 1997 – October 2001), Economist II (June 1991 – July 1997), Economist I (June 1990 – June 1991). Conduct economic and policy analyses on a variety of natural gas issues in Arizona, including gas procurement, rate design, interstate pipeline issues, revenue decoupling, energy conservation, low income issues, natural gas research and development funding, customer services issues, special contracts, various tariff matters, and other natural gas issues. Conduct economic and policy analyses on a variety of electricity issues in Arizona, power plant and transmission line siting cases, energy efficiency, renewable energy standards, rate design, time-of-use service, and low income issues. Prepare recommendations and present written and oral testimony before the Commission and organize workshops and other proceedings on various utility industry issues. Represent the ACC in natural gas proceedings at the Federal Energy Regulatory Commission, at the North American Energy Standards Board, and on the National Association of Regulatory Utility Commissioners' Staff Subcommittee on Gas, including serving as a past Vice-Chair and Chair of the NARUC Staff Subcommittee on Gas.

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Staff Review of UNS Electric 2010 Renewable Energy Standard Tariff and Implementation Plan, (Docket No. E-04204A-09-0347), Arizona Corporation Commission, January 5, 2010.

Staff Review of Tucson Electric Power 2010 Renewable Energy Standard Tariff and Implementation Plan, (Docket No. E-01933A-09-0340), Arizona Corporation Commission, January 5, 2010.

Staff Review of UNS Electric 2011 Renewable Energy Standard Tariff and Implementation Plan, (Docket No. E-04204A-10-0265), Arizona Corporation Commission, November 8, 2010.

Staff Review of Tucson Electric Power 2011 Renewable Energy Standard Tariff and Implementation Plan, (Docket No. E-01933A-10-0266), Arizona Corporation Commission, November 9, 2010.

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Additional Training

| | |
|-------------------------|---------------------------------------------------------------------------------------|
| 1990 | Seminars on Regulatory Economics |
| 1993 | PURTI course on Public Utilities and the Environment |
| 1996 | Center for Public Utilities Workshop on Gas Unbundling and Retail Competition |
| 1997 | NARUC 6 th Annual Natural Gas Conference |
| 1998 | Local Distribution Company Restructuring and Retail Access and Competition Conference |
| 1998 | NARUC 7 th Annual Natural Gas Conference |
| 1999 – 2007, 2010, 2012 | NARUC Summer Committee Meetings |
| 2001 | Center for Public Utilities Workshop on Risk Management in Gas Purchasing |
| 2003-2008 | NARUC Winter Committee Meetings |
| 2004-2007 | NARUC Annual Convention |

Memberships

NARUC – Staff Subcommittee on Gas – member, 1998 - present
 NARUC – Staff Subcommittee on Gas – Vice-Chair - 2002 - 2004
 NARUC – Staff Subcommittee on Gas – Chair - 2005 - 2007
 Michigan State Institute for Public Utilities – NARUC Advisory Committee – 2005-2007
 NARUC – North American Energy Standards Board Advisory Council – 2006 - present
 NARUC – DOE LNG Partnership – 2003 - present

Exhibit RGG-2: Hypothetical Track and Monitor REST Compliance Calculation Scenarios

In 2014, the REST Rules require that 4.5 percent of utility load be met by renewable resources, with 30 percent of that being met through distributed renewable energy resources.

Scenario One

| | | | |
|--------|------------------------------------------------------------------------------------------|---------------|---------------|
| Line 1 | Total Utility Sales in 2014 | 2,222,220 MWH | |
| Line 2 | Initial 2014 Total REST Requirement | 100,000 MWH | Line 1 *4.5% |
| Line 3 | DE Component of REST Requirement (30%) | 30,000 MWH | Line 2*30% |
| Line 4 | Metered Production from DE Facilities that Didn't Take an Incentive and RECs were not Ac | 35,000 MWH | |
| Line 5 | Revised 2014 Total REST Requirement | 65,000 MWH | Line 2-Line 4 |
| Line 6 | DE Production Where an Incentive Was Given and RECs were Acquired | 5,000 MWH | |
| Line 7 | Utility Scale Generation Required to Meet Revised 2014 Total REST Requirement | 60,000 MWH | Line 5-Line 6 |
| Line 8 | Shortfall | MWH | |

Discussion: The utility REST requirement for 2014 was reduced by 35,000 MWH due to production from facilities that did not take an incentive.

The utility met the revised 65,000 MWH 2014 REST Requirement through 5,000 MWH of DE Production from situations where customers had taken an incentive and 60,000 MWH of utility scale generation. The end result is that the utility is in compliance with REST requirements.

Scenario Two

| | | | |
|--------|------------------------------------------------------------------------------------------|---------------|---------------|
| Line 1 | Total Utility Sales in 2014 | 2,222,220 MWH | |
| Line 2 | Initial 2014 Total REST Requirement | 100,000 MWH | Line 1 *4.5% |
| Line 3 | DE Component of REST Requirement (30%) | 30,000 MWH | Line 2*30% |
| Line 4 | Metered Production from DE Facilities that Didn't Take an Incentive and RECs were not Ac | 25,000 MWH | |
| Line 5 | Revised 2014 Total REST Requirement | 75,000 MWH | Line 2-Line 4 |
| Line 6 | DE Production Where an Incentive Was Given and RECs were Acquired | 5,000 MWH | |
| Line 7 | Utility Scale Generation Required to Meet Revised 2014 Total REST Requirement | 70,000 MWH | Line 5-Line 6 |
| Line 8 | Shortfall | | |

Discussion: The utility REST requirement for 2014 was reduced by 25,000 MWH due to production from facilities that did not take an incentive.

The utility met the revised 75,000 MWH 2014 REST Requirement through 5,000 MWH of DE Production from situations where customers had taken an incentive and 70,000 MWH of utility scale generation. The end result is that the utility is in compliance with REST requirements.

Scenario Three

| | | | |
|--------|-------------------------------------------------------------------------------------------|---------------|---------------|
| Line 1 | Total Utility Sales in 2014 | 2,222,220 MWH | |
| Line 2 | Initial 2014 Total REST Requirement | 100,000 MWH | Line 1 *4.5% |
| Line 3 | DE Component of REST Requirement (30%) | 30,000 MWH | Line 2*30% |
| Line 4 | Metered Production from DE Facilities that Didn't Take an Incentive and RECs were not Acc | 15,000 MWH | |
| Line 5 | Revised 2014 Total REST Requirement | 85,000 MWH | Line 2-Line 4 |
| Line 6 | DE Production Where an Incentive Was Given and RECs were Acquired | 5,000 MWH | |
| Line 7 | Utility Scale Generation Required to Meet Revised 2014 Total REST Requirement | 70,000 MWH | Line 5-Line 6 |
| Line 8 | Shortfall | | |

Discussion: The utility REST requirement for 2014 was reduced by 15,000 MWH due to production from facilities that did not take an incentive.

The utility met most of the revised 75,000 MWH 2014 REST Requirement through 5,000 MWH of DE Production from situations where customers had taken an incentive and 70,000 MWH of utility scale generation, leaving a shortfall of 10,000 MWH. The end result is that the utility is short of the REST requirements and would need to address that shortfall in or before its next REST plan filing.

Note: Line 7 is limited to 70 percent of the Initial 2014 Total REST requirement in recognition that under the REST rules, utility-scale generation cannot meet more than 70 percent of the total REST requirement.

ORIGINAL

BEFORE THE ARIZONA CORPORATION

COMMISSIONERS

BOB STUMP- Chairman

GARY PIERCE

BRENDA BURNS

BOB BURNS

SUSAN BITTER SMITH

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AZ CORP COMMISSION

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IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND GPS-
3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE ENERGY
ADJUSTOR.

DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF
ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-04204A-12-0297

STAFF'S NOTICE OF FILING REBUTTAL
TESTIMONY

Staff of the Arizona Corporation Commission ("Staff") hereby files the Rebuttal Testimony of
Robert G. Gray in the above-entitled docket.

RESPECTFULLY SUBMITTED this 8th day of May, 2013.

Arizona Corporation Commission

DOCKETED

MAY 08 2013

DOCKETED BY

TJM

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BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
GARY PIERCE
Commissioner
BRENDA BURNS
Commissioner
BOB BURNS
Commissioner
SUSAN BITTER SMITH
Commissioner

| | |
|------------------------------------------------|-----------------------------|
| IN THE MATTER OF ARIZONA PUBLIC) | DOCKET NO. E-01345A-10-0394 |
| SERVICE COMPANY REQUEST FOR) | |
| APPROVAL OF UPDATED GREEN POWER) | |
| <u>RATE SCHEDULE GPS-1, GPS-2, AND GPS-3</u>) | |
| IN THE MATTER OF THE APPLICATION OF) | DOCKET NO. E-01345A-12-0290 |
| ARIZONA PUBLIC SERVICE COMPANY FOR) | |
| APPROVAL OF ITS 2013 RENEWABLE) | |
| ENERGY STANDARD IMPEMETATION FOR) | |
| <u>RESET OF RENEWABLE ENERGY ADJUSTOR</u>) | |
| IN THE MATTER OF THE APPLICATION OF) | DOCKET NO. E-01933A-12-0296 |
| TUCSON ELECTRIC POWER COMPANY FOR) | |
| APPROVAL OF ITS 2013 RENEWABLE) | |
| ENERGY STANDAR IMPLEMENTATION) | |
| PLAN AND DISTRIBUTED ENERGY) | |
| ADMINISTRATIVE PLAN AND REQUEST FOR) | |
| RESET OF ITS RENEWABLE ENERGY) | |
| <u>ADJUSTOR</u>) | |
| IN THE MATTER OF THE APPLICATION OF) | DOCKET NO. E-04204A-12-0297 |
| UNS ELECTRIC, INC. FOR APPROVAL OF ITS) | |
| 2013 RENEWABLE ENERGY STANDARD) | |
| IMPLEMENTATION PLAN AND DISTRIBUTED) | |
| ENERGY ADMINISTRATIVE PLAN AND) | |
| REQUEST FOR RESET OF ITS RENEWABLE) | |
| <u>ENERGY ADJUSTOR</u>) | |

REBUTTAL
TESTIMONY
OF
ROBERT G. GRAY
EXECUTIVE CONSULTANT III
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

MAY 8, 2013

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EXECUTIVE SUMMARY
ARIZONA PUBLIC SERVICE COMPANY, ET AL
DOCKET NOS. E-01345A-10-0394, ET AL

My rebuttal testimony in this proceeding provides Staff's response to testimony filed by other parties on April 24, 2013, regarding how the Commission should treat distributed energy for purposes of determining whether jurisdictional utilities are in compliance with the Renewable Energy Standard and Tariff rules. Specifically, my rebuttal testimony addresses recommendations by parties that the Commission either delay a decision regarding this matter or that the Commission adopt some form of auction or standard offer. My rebuttal further responds to comments made regarding whether the Commission has an interest in knowing what production is taking place from renewable generation facilities that have not taken a utility incentive.

1 **INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is Robert G. Gray. I am an Executive Consultant III employed by the Arizona
4 Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff").
5 My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

6
7 **Q. Are you the same Robert G. Gray that filed Direct Testimony on behalf of Staff in**
8 **this proceeding on April 24, 2013?**

9 A. Yes.

10
11 **Q. What is the scope of this testimony?**

12 A. My rebuttal testimony in this proceeding provides Staff's response to testimony filed by
13 other parties on April 24, 2013, regarding how the Commission should treat distributed
14 energy for purposes of determining whether jurisdictional utilities are in compliance with
15 the Renewable Energy Standard and Tariff ("REST") rules. Specifically, my rebuttal
16 testimony addresses recommendations by parties that the Commission either delay a
17 decision regarding this matter or that the Commission adopt some form of auction or
18 standard offer. My rebuttal further responds to comments made regarding whether the
19 Commission has an interest in knowing what production is taking place from renewable
20 generation facilities that have not taken a utility incentive.

21
22 **Q. Have you reviewed the Direct Testimony of various parties that were filed on April**
23 **24, 2013?**

24 A. Yes. I have reviewed their testimony and will respond to certain proposals and comments
25 in this testimony.

PROPOSALS FOR DELAYING MAKING A FINDING ON THIS MATTER

Q. Have certain parties made proposals in this proceeding that would further delay the Commission directing how utilities would demonstrate compliance when they are no longer offering incentives?

A. Yes. Solar Energy Industries Association Witness Carrie Cullen Hutt recommends in April 24th testimony that the Commission take no action at this time regarding utility compliance with the DE requirement or if the Commission does take action it should only grant a one year waiver of the DE requirement, during which the Commission would gather further data and consider the best policy choices (p.3, lines 14-19 of direct testimony).

Additionally, Western Resource Advocates ("WRA") Witness David Berry's April 24th testimony includes a proposal to hold a technical conference process prior to considering the utility proposals in this proceeding (p.8, lines 21-27 of direct testimony).

Further, while not directly endorsing a delay, Vote Solar Initiative Witness Rick Gilliam indicates that he believes it is premature for the Commission to address the distributed renewable energy requirement (p.12, line 3 of direct testimony).

Q. Does Staff believe that the Commission should delay addressing how utilities should reach compliance in a situation where at least some incentives have reached zero or are very low?

A. No. The DE requirement compliance issue has been around for a while now. In Decision No. 72737 (January 18, 2012), the Commission ordered that APS shall "in its 2013 REST Plan, consider the problem of future distributed customers unwilling to provide Renewable Energy Credits to Arizona Public Service Company and shall suggest possible

1 solutions to this dilemma.” This led to APS’ filing on June 29, 2012, its proposed 2013
2 REST plan, that included its initial track and record proposal. Similarly, TEP and UNS
3 raised this issue almost a year ago in their July 2012 REST plan filings, seeking
4 Commission guidance on this issue. Staff then made its initial track and record proposal
5 in its Staff Reports on the 2013 APS, TEP, and UNS REST plans in October 2012. The
6 Commission decided that this issue should be more fully vetted in this current proceeding.
7 Over the last year Staff has had numerous discussions regarding this issue with a wide
8 variety of parties, including utilities and a variety of renewable industry representatives.
9 A review of the testimony filed in this proceeding shows that there is little in the way of
10 new ideas on this subject that have not been put forth before in various forms, attesting to
11 the fact that this issue has received significant consideration even prior to this current
12 hearing process. Staff believes that this issue should be addressed in substantive fashion
13 in this current proceeding, as contemplated by the Commission. While some utilities may
14 be beyond compliance at the moment in certain DE segments, other utilities are not.

15
16 As noted in Staff’s direct testimony, one of Staff’s goals in proposing Track and Monitor
17 is to accurately reflect the reality of how much load is actually being met with renewable
18 energy in Arizona. Continuing the status quo will only exacerbate the incomplete picture
19 the Commission is receiving concerning the amount of renewable energy that is being
20 generated by all Arizona renewable energy production facilities.

21
22 SEIA alludes to the need to wait to gather further information (Hutt direct testimony p.11,
23 lines 1-11) as well as wait for net metering issues to be resolved (Hutt direct testimony, p.
24 11, line 27 – p. 12, line 3). WRA advocates understanding a variety of changing
25 circumstances, including regulatory changes, rate design changes, and other issues (Berry
26 Direct Testimony, p. 9, lines 30-41). However, since the REST rules have gone into

1 place, there has been constant change in the Arizona renewable energy marketplace and
2 the Commission has addressed such changes through the process of considering utilities'
3 annual REST plans as well as in other forums. The Commission can continue to address
4 such issues as they arise in the future through the variety of avenues available to it. There
5 is no need to wait in this current proceeding for things to play out in Arizona's renewable
6 marketplace in the next year(s) before taking action on a current need to address how
7 utilities reach compliance when they offer low or no incentives in at least some DE
8 segments. For example, regarding net metering, there is no clear timeline as to how long
9 the discussions and/or possible Commission proceedings on net metering could take.
10 Waiting for issues like net metering to be sorted out first is likely to greatly delay the
11 Commission acting on the compliance issue being considered in this proceeding.

12
13 Further, extending this process out possibly a year or more and/or involving filings,
14 technical conference participations, etc. will represent a significant commitment of
15 resources for Staff and other interested parties. At the January 23, 2013 hearing on the
16 APS 2013 REST plan, Solar City representative Court Rich cited a concern over resource
17 allocations in arguing that this proceeding should have been done as a technical
18 conference rather than a hearing (p.44, lines 8-15 of transcript on Item U-4). Staff agrees
19 that the Commission should expeditiously address this matter and avoid unnecessary
20 resource allocations by the many parties involved in this proceeding.

1 Q. Do you wish to further elaborate on the Commission's interest in having renewable
2 energy production reported from both facilities that do and do not take an incentive
3 from a utility in light of NRG Solar LLC ("NRG") Witness Diane Fellman's
4 assertion that it is unclear whether such reporting is necessary or relevant and that it
5 would be confusing and potentially misleading (direct testimony, p.5, lines 22-25)?

6 A. Yes. The Commission has very relevant and compelling interests in knowing what
7 production is coming from renewable energy facilities, whether they take an incentive
8 from utilities or not. As part of ensuring reliable utility service in Arizona, the ACC has a
9 direct interest in knowing about all electric generation facilities in Arizona; particularly
10 those on which its jurisdictional utilities will be relying.

11
12 For example, jurisdictional utilities in Arizona are required to file integrated resource
13 plans ("IRPs") in Arizona that contain a variety of planning information from the utilities.
14 These IRPs include information on the generation and other facilities or services that are
15 available to ensure that electric utilities have sufficient resources to meet their customer
16 loads, including renewable resources. Renewable resources are gradually becoming a
17 more important part of that mix of resources for meeting a utility's load requirements.
18 Utilities and the Commission have an interest in the role renewable resources play in
19 ensuring reliable electric service in Arizona, regardless of whether such facilities took an
20 incentive from a utility when they were installed or not. Similarly, utilities have an
21 interest in knowing about all interconnected renewable energy generation in their service
22 territory for transmission and generation planning purposes.

1 **Q. NRG Witness Fellman also refers to potential double counting when utilities would**
2 **report production from facilities that did not take a utility incentive because they**
3 **would be potentially used for a secondary purpose (direct testimony p.5, lines 19-22).**
4 **Are you proposing or are you aware of any secondary purposes NRG may be**
5 **referring to?**

6 **A. There is no secondary purpose; there is only a single purpose. That single purpose is to**
7 **measure and thereby know how much of a utilities load is being served by all renewable**
8 **resources.**

9
10 **Q. Would the Commission receive information on the production of renewable energy**
11 **facilities that do and do not take an incentive regardless of this proceeding?**

12 **A. Yes, Staff believes so. Under prior Commission orders approving past years' REST plans,**
13 **including for APS, TEP, and UNS, the Commission ordered the installation of production**
14 **meters on all renewable energy installations within the utility service territories. Staff**
15 **understands that TEP and UNS already have production meters on all renewable**
16 **production facilities in their service territories and that APS will have production meters**
17 **on all renewable production facilities in its service territory in the near future.**

18
19 **Q. A number of parties make recommendations that the utilities should be required to**
20 **acquire DE RECs through some sort of purchasing process. What sorts of proposals**
21 **have been made?**

22 **A. WRA has made a proposal that utilities hold an auction process to acquire RECs, with the**
23 **specifics of the auction process being determined through a collaborative effort among**
24 **Staff, utilities, and stakeholders (p. 8, lines 19-20 of David Berry's Direct Testimony).**
25 **Vote Solar proposes that utilities conduct periodic standard offer processes to acquire**
26 **RECs once direct incentives have been eliminated and there is a need for RECs to meet**

1 compliance (p.15, line 17 – p.16, line 15 of Rick Gilliam’s testimony). The Department of
2 Defense and All Other Federal Executive Agencies (“DOD/FEA”) suggests that utilities
3 be required to acquire the RECs that are necessary to meet compliance under the DE
4 portion of the REST rules (p. 3, lines 14-15 of Cynthia J. Cordova’s Direct Testimony),
5 without recommending a specific method of how utilities would do that.

6
7 **Q. Does Staff support the WRA or Vote Solar proposals?**

8 A. No. Staff has serious concerns about WRA’s auction proposal and Vote Solar’s standard
9 offer proposal. Some form of auction or standard offer would expose utility ratepayers to
10 an unknown and potentially large amount of additional cost that would have to be
11 recovered through the REST surcharge. Additionally, in a roundabout way, under an
12 auction or standard offer utilities would be reinstituting incentives for DE at a time when
13 the direct incentives have been greatly reduced or eliminated, but without direct
14 Commission control over the level of such incentives as has traditionally been the case.
15 The additional cost incurred by utilities under these proposals would inevitably put
16 upward pressure on the REST surcharge and customer class caps.

17
18 **Q. Do these proposals violate any of Staff’s primary goals as identified on page 6 of your**
19 **direct testimony?**

20 A. Yes. These proposals would not minimize the cost to ratepayers as there would be some
21 level of additional cost exposure to ratepayers under either proposal.

22
23 **Q. Please describe Staff’s concern with the potential cost exposure to ratepayers of an**
24 **auction or standard offer model.**

25 A. Inherently the cost utilities will have to pay for DE RECs and pass along to ratepayers
26 through the REST surcharge under an auction or standard offer model will not be known

1 until the auction or standard offer actually takes place in the future. So, the cost exposure
2 to ratepayers cannot be known at this time. Additionally, it would be difficult for utilities
3 to present a budget to the Commission in their annual REST plans, when they would not
4 know how much they would be paying for RECs in the coming year.

5
6 **Q. Have parties provided any estimates of the cost to ratepayers of these approaches?**

7 **A. Yes. WRA Witness David Berry noted that in early 2012 REC prices in compliance**
8 **markets ranged from a few dollars per MWh to \$60 per MWh (or \$0.06 per kWh),**
9 **depending on limitations on what technologies could be used as well as if projects could**
10 **only be located in certain states (p. 5, lines 2-3 of direct testimony). If an Arizona utility**
11 **paid such prices to meet its DE REC requirements, such expenditures could significantly**
12 **increase a utility's annual REST budget.**

13
14 **Q. If an Arizona utility instituted such an auction, what price might they pay for DE**
15 **RECs?**

16 **A. There is no way of knowing, but there is reason to believe that there would be some**
17 **upward pressure on the price of RECs under such a scenario. First, utilities would be**
18 **buying such DE RECs in an environment where the sellers of such RECs would know that**
19 **the utilities had to buy DE RECs to meet the utility's REST requirements, thus providing**
20 **the sellers with leverage. Second, the available market for each utility to buy from would**
21 **be limited to the DE RECs available within Arizona, per section 1802.B of the REST**
22 **rules. Vote Solar Witness Rick Gilliam notes in his testimony that a utility may need to**
23 **ratchet up the price under Vote Solar's standard offer proposal for utilities to gather**
24 **sufficient RECs for compliance (direct testimony, page 16, lines 5-7).**

1 **Q. Please compare having an auction or standard offer process to the traditional way**
2 **the utilities have acquired RECs?**

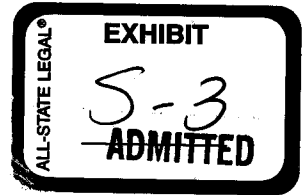
3 A. Both methods are similar in that they provide a transaction whereby the utility pays the
4 customer who installs a DE system in exchange for the RECs. In a roundabout way,
5 introducing an auction or standard offer process would be a way of reinstituting an
6 incentive for DE market segments where the direct incentive had been eliminated. The
7 timing of the payment is different, but the biggest difference is that under the traditional
8 way, the Commission set the specific incentive levels for various technologies through the
9 annual REST plan process, whereas under an auction or standard offer process, the
10 Commission would not know what prices are being paid until sometime after the auction
11 or standard offer took place. Staff is not recommending maintenance or reintroduction of
12 direct incentives for the sole purpose of acquiring RECs, but it is worth noting that such a
13 process would be a more defined and clear way of acquiring RECs than through an
14 auction or standard offer approach.

15
16 **Q. Does Staff have any comment on the Residential Utility Consumer Office's**
17 **("RUCO") proposal regarding the redefinition of DG compliance through**
18 **consideration of null electricity and DG system hosting?**

19 A. RUCO's proposal is not described in sufficient detail to provide a complete picture of how
20 such a system would work, but Staff believes that RUCO's proposal may be worth further
21 consideration.

22
23 **Q. Does this conclude your rebuttal testimony?**

24 A. Yes, it does.



SURREBUTTAL
TESTIMONY
OF
ROBERT G. GRAY
EXECUTIVE CONSULTANT III
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

MAY 22, 2013

EXECUTIVE SUMMARY
ARIZONA PUBLIC SERVICE COMPANY, ET AL
DOCKET NOS. E-01345A-10-0394, ET AL

My surrebuttal testimony in this proceeding provides Staff's response to rebuttal testimony filed by other parties on May 8, 2013, regarding how the Commission should treat distributed energy for purposes of determining whether jurisdictional utilities are in compliance with the Renewable Energy Standard and Tariff rules.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Robert G. Gray. I am an Executive Consultant III employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Are you the same Robert G. Gray that filed Direct Testimony on behalf of Staff in this proceeding on April 24, 2013 and Rebuttal Testimony on behalf of Staff in this proceeding on May 8, 2013?

A. Yes.

Q. What is the scope of this testimony?

A. My Surrebuttal testimony in this proceeding provides Staff's response to rebuttal testimony filed by other parties on May 8, 2013, regarding how the Commission should treat distributed energy for purposes of determining whether jurisdictional utilities are in compliance with the Renewable Energy Standard and Tariff ("REST") rules.

Q. Have you reviewed the Rebuttal Testimony of various parties that were filed on May 8, 2013?

A. Yes. I have reviewed their testimony and will respond to certain proposals and comments in this testimony.

1 **Q. Have any parties proposed new ideas in their rebuttal testimony on how utilities**
2 **would demonstrate compliance with the REST requirements when they are no longer**
3 **offering incentives?**

4 A. Yes. Residential Utility Consumer Office ("RUCO") Witness Lon Huber presents a
5 backstop proposal of splitting renewable energy credits ("RECs") between the system
6 owner and the utility on a 50/50 basis.

7
8 **Q. Please comment on this proposal.**

9 A. Staff appreciates RUCO's efforts to put forth different proposals for consideration by the
10 Commission and parties in this proceeding and the 50/50 split would certainly represent a
11 compromise between the interests of the utilities to meet compliance and system owners to
12 retain the RECs. In cases where commercial customers needed RECs to meet internal or
13 external standards, they would be allowed to retain all RECs from their project(s).

14
15 For utilities, receiving only half of the RECs from a given DE project means that they
16 would have to have twice the projects in their service territory to meet their DE
17 requirement in a given year, effectively doubling the DE requirement for utilities. The
18 retention by system owners of only 50% of the REC, does not address the concerns of a
19 taking of property rights that has been raised by several parties. This proposal would also
20 create disparate treatment between residential and certain commercial customers, who are
21 allowed to retain 100% of the related REC. Therefore, it seems that RUCO's proposal
22 will not satisfy either of these concerns.

23
24 If there is financial value in owning RECs, it would seem that all system owners should be
25 treated the same in regard to RECs, so they can receive the same economic benefit from
26 such RECs.

1 **Q. Having reviewed the Rebuttal Testimony of various parties, is Staff changing its**
2 **position that the Commission should not delay addressing the issue in REST**
3 **compliance for utilities in an environment where incentives are small or nonexistent?**

4 **A. No. Staff has not seen any new information in this latest round of testimony that would**
5 **make Staff believe that a significant delay in addressing this issue is in the public interest.**
6 **This matter has been before the Commission for a long time now, as I discussed in my**
7 **Rebuttal Testimony, and Staff believes that continuing to delay a decision would provide**
8 **little value to the Commission and would require significant additional resources from the**
9 **Commission and parties to have further on-going discussions and proceedings before the**
10 **Commission. While some utilities and segments may be over compliant under the REST**
11 **rules, others, such as UNS Electric, are not and need a viable way to achieve compliance**
12 **sooner, rather than later.**

13
14 **Q. RUCO indicates it believes that this compliance issue could work itself out (Huber**
15 **Rebuttal Testimony p. 7, lines 4-5). Do you agree?**

16 **A. No. There has been no evidence presented to date in this proceeding indicating that a**
17 **change in market dynamics or result of some future net metering proceeding will solve the**
18 **compliance issue within a reasonable period of time. Undoubtedly there will be a variety**
19 **of changes in the marketplace and possibly in regulatory matters such as net metering, rate**
20 **design, etc. But such possibilities do not present a compelling argument to let this issue**
21 **languish for an indeterminate period of time while utilities continue to have compliance**
22 **obligations to meet under the REST rules.**

23
24 **APS, TEP, and UNS Electric have all given indications that they expect to exhaust their**
25 **residential UFI budgets prior to the end of 2013, meaning that the UFI level for all three**
26 **utilities will trigger to zero. This means that no further residential DE RECs will be**

1 acquired by these utilities once this happens. And it would seem unlikely that residential
2 UFI's would be reinstituted in such utilities 2014 REST plans, given the level of market
3 activity at the current minimal incentive level.

4
5 **Q. What is Staff's perception of parties' responses to Staff's Track and Monitor**
6 **proposal?**

7 **A.** Among the parties that filed rebuttal testimony, the only substantive concern Staff saw
8 regarding its Track and Monitor proposal is that it could represent a double counting of
9 RECs. Parties expressing this concern did not indicate any other concerns to the Track
10 and Monitor proposal.

11
12 TEP expressed support for the Staff proposal while indicating that the utility believed it
13 was a short term proposal. Staff believes that the Track and Monitor proposal could be
14 both a short and long term solution to the issue at hand in this proceeding.

15
16 **Q. A variety of parties have discussed in their direct and rebuttal testimony whether the**
17 **Staff proposal and similar proposals result in the double counting of RECs in some**
18 **fashion. Is there any consensus on whether this is the case?**

19 **A.** No. The response of parties is all across the board, ranging from certainty that there
20 would be double counting to certainty that there is not double counting and a number of
21 parties expressing various levels of uncertainty. Staff believes that its proposal does not
22 double count RECs, a contention supported by TEP Witness Tilghman who states in his
23 Rebuttal Testimony that under Staff's proposal the fear that RECs would be valueless is
24 "unwarranted and premature" given that such RECs would not be used to meet any REST
25 compliance targets (p.3, lines 15-18). Other parties seem to believe that the mere act of
26 adjusting the REST requirement downward to carve out systems that did not take an

1 incentive from being counted toward the REST requirement is in some manner taking the
2 RECs from such systems. Staff believes that such a reading does not reflect how the
3 Track and Monitor proposal is intended to operate.

4
5 **Q. Do you believe that at least some parties are misconstruing how Track and Monitor**
6 **works?**

7 **A.** Yes. The very feature of Track and Monitor meant to avoid double counting, carving out
8 systems that do not take an incentive from the REST requirement, and thus expressly not
9 having utilities acquire RECs for that portion of the previous REST requirement
10 percentage, seems to be read by some as somehow involving an acquisition of RECs. This
11 is not the case under Staff's proposal. For example, if in 2025 utilities were acquiring
12 RECs for 13 percent under the REST requirement, and the further two percent represented
13 systems that did not take an incentive, RECs would only be acquired by the utilities for the
14 13 percent, not the two percent, which was explicitly carved out from the REST
15 requirement to make room for those systems that did not take an incentive to retain their
16 RECs.

17
18 **Q. How can the Commission know whether a proposal such as Track and Monitor**
19 **would be perceived as double counting in the marketplace?**

20 **A.** Unfortunately there is no definitive way of knowing. There is no entity that conclusively
21 decides such matters and none of the parties to this case certify RECs. One entity that is
22 very involved in certifying RECs is the Center for Resource Solutions ("CRS") which
23 operates the Green-e Energy certification and verification program.

1 **Q. Who is CRS?**

2 A. Based in San Francisco, California, CRS' mission is to create policy and market solutions
3 to advance sustainable energy according to its website ([http://www.resource-](http://www.resource-solutions.org)
4 [solutions.org](http://www.resource-solutions.org)). Further, according to CRS' website, its Board of Directors is comprised of
5 "leading experts and legislators dedicated to promoting renewable energy." CRS is not a
6 party to this track and record proceeding and thus has not sponsored a witness, filed
7 testimony, or provided other evidence since this process was initiated in January 2013.
8

9 **Q. Has CRS made any filing in the recent past regarding this general subject?**

10 A. Yes. In the APS and TEP dockets addressing those companies' 2013 REST plans (Docket
11 Nos. E-01345A-12-0290 and E-01933A-12-0296), CRS filed the same letter, on
12 November 16, 2012, discussing the track and record proposal then under discussion. CRS
13 expressed a number of concerns with the track and record proposal, including double
14 counting, complication of utilities' compliance efforts, and administrative complexity. In
15 its letter, CRS advocates for some form of market mechanism such as a standard offer
16 process where utilities would have to acquire RECs from REC owners. CRS' letter
17 further indicates that if such a market option is not viable that it may be possible to have
18 some form of compliance waiver, though CRS does not spell out what such a waiver
19 would look like.
20

21 CRS' letter also notes that one state, Hawaii, modified its renewable portfolio standard
22 ("RPS") eligibility rules to count all customer-sited, grid-connected renewable generation
23 toward meeting the state's RPS goal. Thus, if the Commission were to move toward a
24 solution such as tying REC transfers to net metering or interconnection, there is precedent
25 elsewhere, though of course such an approach would imperil the value of RECs for those
26 who install DG systems.

1 **Q. Have any parties that believe Track and Monitor is double counting indicated that**
2 **Staff's proposal could be adjusted to no longer cause double counting?**

3 A. Yes. RUCO indicated it believed Staff's proposal "could be modified to ensure REC
4 integrity" (Huber Rebuttal Testimony, p.5, lines 20-21). Staff is willing to consider any
5 proposals that might modify Track and Monitor to potentially enhance the likelihood of
6 maintaining REC integrity. However, as stated earlier, Staff believes its Track and
7 Monitor proposal maintains the integrity of the RECs.

8
9 **Q. In the absence of certainty regarding if/how RECs might be certified under the**
10 **Track and Monitor proposal, how should the Commission view Staff's proposal?**

11 A. Staff still believes that its proposal is superior to other options parties have put forward in
12 this proceeding. Staff's intent in crafting the Track and Monitor proposal was to carve out
13 entities that did not take an incentive, such as federal agencies like the Department of
14 Defense, so they could maintain their RECs for their own purposes, yet retain the ACC's
15 interest in seeing its 15 percent renewable energy goal for 2025 reached.

16
17 **Q. Is the uncertainty and discussion of RECs being certified or not causing a loss of**
18 **focus on the real purpose and goal of the REST rules?**

19 A. Yes. Fundamentally, the REST rules are concerned with, among other things, requiring
20 Arizona jurisdictional utilities acquiring a rising percentage of kWhs from renewable
21 energy, reaching 15 percent by 2025. To measure whether a portion of kWhs are
22 achieved, you must measure kWhs. While RECs were included in the REST rules as a
23 means to measure compliance and also to provide possible opportunities for sale, etc.,
24 fundamentally reaching 15 percent of kWhs involves utilities having a certain amount of
25 kWhs each year to measure whether they fall short, achieve, or surpass the percentage
26 REST requirements in any given year. The Commission recognized the value in

1 measuring actual kWh production when it approved APS' request to install production
2 meters on all renewable DE production facilities within APS' service territory, as TEP and
3 UNS had been doing for a number of years. The value in this is that the utilities and the
4 Commission will know the amount of kWhs systems are actually producing, rather than
5 relying on any sort of estimate or other less direct and less accurate measure. The best and
6 most accurate way to measure compliance is for utilities to report actual kWh production
7 and to compare that to the percentage of kWh retail sales each year. Staff supports efforts
8 to maintain the value of RECs for system owners who install renewable DE systems so
9 long as it does not require (1) ratepayers to pay more to deploy DE systems than the
10 market requires, or (2) the Commission to ignore the amount of renewable DE energy
11 being generated in Arizona. Staff believes its Track and Monitor proposal accomplishes
12 both. However, if the Commission believes Staff's Track and Monitor proposal fails to
13 maintain the value of RECs and is not adopted, Staff recommends the Commission
14 deemphasize RECs in Arizona, recognizing that REST compliance is demonstrated most
15 clearly and directly through measured kWhs, not RECs.

16
17 **Q. Specifically what course of action does Staff recommend if Track and Monitor is not**
18 **adopted?**

19 **A.** Staff would recommend that the Commission move directly to reopen the REST rules for
20 modification if Track and Monitor is not adopted.

21
22 **Q. If the REST rules were reopened under this scenario, would there be a**
23 **predetermined result of how the REST rules would be changed?**

24 **A.** No. Parties would be free to propose or not propose changes as they see fit.
25

1 Q. In summary, has Staff's position recommending adoption of the Track and Monitor
2 proposal and against delaying this process changed?

3 A. No.
4

5 Q. Has Staff prepared a summary of the proposals/alternatives put forward to date in
6 this proceeding?

7 A. Yes. Attached as Exhibit A is a brief summary chart of the proposals and alternatives that
8 have been identified in parties' direct and rebuttal testimony in this proceeding.
9

10 Q. Does this conclude your rebuttal testimony?

11 A. Yes, it does.

Exhibit A – Summary of Proposals and Alternatives Put Forth in Direct and Rebuttal Testimony

The table below summarizes the pros and cons of all the proposals and alternatives raised by parties in direct and rebuttal testimony in this proceeding. The table notes how, in Staff's opinion, each proposal meets or does not meet the five important considerations Staff identified in its direct testimony, listed below the table for reference purposes.

| Proposal | Pros | Cons |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Track and Record | Provides clear method of compliance. Fully recognizes reality of electric load being served in Arizona. Minimizes cost to ratepayers. | Concern with double counting could reduce REC value of DE installations. May require REST rules changes to make permanent. |
| Track and Monitor | Provides clear method of compliance. Fully recognizes reality of electric load being served in Arizona. Minimizes cost to ratepayers. Maintains REC value of DE installations. | May require REST rules changes to make permanent. |
| Eliminate DE Carve-out While Maintaining 15% REST Requirement | Provides clear method of compliance. Maintains REC value of DE installations. | Does not recognize DE portion of electric load being served in Arizona. Does not minimize cost to ratepayers. Would require REST rules changes. |
| Eliminate DE Carve-out While Reducing 15% REST Requirement to 10.5% | Provides clear method of compliance. Minimizes cost to ratepayers. Maintains REC value of DE installations. | Does not recognize DE portion of electric load being served in Arizona. Would require REST rules changes. |
| Auction | Likely provides method of compliance. Maintains REC value of DE installations. Would not require REST rules changes. | May not fully recognize reality of electric load being served in Arizona. Does not minimize cost to ratepayers. |
| Standard – Offer Process | Likely provides method of compliance. Maintains | May not fully recognize reality of electric load being |

| | REC value of DE installations. Would not require REST rules changes. | served in Arizona. Does not minimize cost to ratepayers. |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Exchange RECs for Net Metering | Likely provides method of compliance. Fully recognizes reality of electric load being served in Arizona. Minimizes cost to ratepayers. | Concern with utility taking RECs without compensating system owners. May require REST rules changes to make permanent. |
| Exchange RECs for Interconnection | Likely provides method of compliance. Fully recognizes reality of electric load being served in Arizona. Minimizes cost to ratepayers. | Concern with utility taking RECs without compensating system owners. May require REST rules changes to make permanent. |
| Split RECs 50/50 Between Utility and System Owner, With Exceptions | May provide method of compliance. Could maintain REC value of DE installations. Is being proposed as a temporary measure, so no permanent REST rules changes likely required. | Does not fully recognize reality of electric load being served in Arizona. Does not minimize cost to ratepayers. |
| Null electricity and customer sited systems | This proposal lacked detail but appears to be similar to the Track and Monitor proposal. | |

Note: Other proposals are procedural in nature, such as delaying the proceeding in some manner or holding workshops.

Note: Staff's five important considerations, contained on page 6, lines 1—21 of Staff's direct testimony are as follows:

1. Provide a clear and easily documented way for utilities to achieve compliance under the rest rules;
2. Recognize reality regarding how much electric load is actually being met with renewable energy;
3. Minimize the cost to ratepayers;
4. Maximize value to the extent possible for those who undertake DE installations and Arizona as a whole; and
5. Be minimally invasive to the REST rules



BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
GARY PIERCE
Commissioner
BRENDA BURNS
Commissioner
BOB BURNS
Commissioner
SUSAN BITTER SMITH
Commissioner

| | |
|------------------------------------------------|-----------------------------|
| IN THE MATTER OF ARIZONA PUBLIC) | DOCKET NO. E-01345A-10-0394 |
| SERVICE COMPANY REQUEST FOR) | |
| APPROVAL OF UPDATED GREEN POWER) | |
| <u>RATE SCHEDULE GPS-1, GPS-2, AND GPS-3</u>) | |
| IN THE MATTER OF THE APPLICATION OF) | DOCKET NO. E-01345A-12-0290 |
| ARIZONA PUBLIC SERVICE COMPANY FOR) | |
| APPROVAL OF ITS 2013 RENEWABLE) | |
| ENERGY STANDARD IMPEMETATION FOR) | |
| <u>RESET OF RENEWABLE ENERGY ADJUSTOR</u>) | |
| IN THE MATTER OF THE APPLICATION OF) | DOCKET NO. E-01933A-12-0296 |
| TUCSON ELECTRIC POWER COMPANY FOR) | |
| APPROVAL OF ITS 2013 RENEWABLE) | |
| ENERGY STANDAR IMPLEMENTATION) | |
| PLAN AND DISTRIBUTED ENERGY) | |
| ADMINISTRATIVE PLAN AND REQUEST FOR) | |
| RESET OF ITS RENEWABLE ENERGY) | |
| <u>ADJUSTOR</u>) | |
| IN THE MATTER OF THE APPLICATION OF) | DOCKET NO. E-04204A-12-0297 |
| UNS ELECTRIC, INC. FOR APPROVAL OF ITS) | |
| 2013 RENEWABLE ENERGY STANDARD) | |
| IMPLEMENTATION PLAN AND DISTRIBUTED) | |
| ENERGY ADMINISTRATIVE PLAN AND) | |
| REQUEST FOR RESET OF ITS RENEWABLE) | |
| <u>ENERGY ADJUSTOR</u>) | |

RESPONSIVE
TESTIMONY
OF
ROBERT G. GRAY
EXECUTIVE CONSULTANT III
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

JUNE 17, 2013

EXECUTIVE SUMMARY
ARIZONA PUBLIC SERVICE COMPANY, ET AL
DOCKET NOS. E-01345A-10-0394, ET AL

My responsive testimony in this proceeding provides Staff's response to the June 10, 2013 direct testimony of Residential Utility Consumer Office Witness Jennifer Martin.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Robert G. Gray. I am an Executive Consultant III employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Are you the same Robert G. Gray that filed Direct Testimony on behalf of Staff in this proceeding on April 24, 2013, Rebuttal Testimony on behalf of Staff in this proceeding on May 8, 2013, and Surrebuttal Testimony on behalf of Staff in this proceeding on May 22, 2013?

A. Yes.

Q. What is the scope of this testimony?

A. My responsive testimony in this proceeding provides Staff's response to the direct testimony of Residential Utility Consumer Office ("RUCO") witness Jennifer Martin, with the Center for Resource Solutions ("CRS").

Q. Having reviewed Ms. Martin's June 10, 2013 direct testimony is Staff changing its position in this proceeding regarding its recommendation to adopt the Track and Monitor proposal and whether this proposal would result in double counting?

A. No.

Q. Is it clear to you whether CRS would consider Staff's Track and Monitor proposal double counting?

A. It is unclear. For example, on page 13, lines 9-11 of Ms. Martin's testimony she asks the question "Do you think that Staff's proposal of Track and Monitor **could** result in double

1 counting?" and answers with "Yes, the problem of double counting **could** arise."
2 (emphasis added)
3

4 **Q. Is there also uncertainty regarding other proposals, based on Ms. Martin's direct**
5 **testimony?**

6 **A.** Yes, uncertainty is also expressed regarding RUCO's baseline proposal and waiver
7 proposals.
8

9 **Q. Ms. Martin has a discussion on pages 7-13 of her testimony regarding what double**
10 **counting is from a variety of perspectives. Please explain how Staff's Track and**
11 **Monitor proposal is not double counting according to a number of criteria listed by**
12 **Ms. Martin.**

13 **A.** I believe Ms. Martin may not fully understand Staff's proposal. Because under Staff's
14 proposal the Commission would issue an order establishing a new, lower Renewable
15 Energy Standard and Tariff ("REST") requirement, and utilities would only acquire kWh
16 (and associated renewable energy credits ("RECs")) to comply up to that lower
17 Commission mandate, there would be no double counting under Staff's proposal. All
18 renewable energy generated in Arizona by customers that do not take an incentive from a
19 utility for their DG systems and do not sell their RECs to the utility, those customers
20 would be free to use their RECs as they see fit. Those RECs would not be used to meet
21 any Commission REST standard, mandate, or requirement in Arizona. It is key to
22 understand that the only standard utilities would be meeting under Staff's proposal, if
23 adopted by the Commission, would be the lower mandate ordered by the Commission, not
24 15 percent.
25

1 For example, on page 7, lines 16 – page 8, line 4, Ms. Martin indicates CRS would not
2 certify RECs that are being used simultaneously to meet state or other standards and that
3 can be legitimately claimed by another party. Staff's Track and Monitor proposal violates
4 neither of these conditions, as no Arizona utility would be using RECs or electricity from
5 installations that did not take an incentive to meet any ACC standard and such RECs
6 would not be claimed by anyone other than the installation owner under Staff's proposal.
7 Similarly, Staff's proposal does not violate the Code of Conduct provisions Ms. Martin
8 references on page 8, lines 6-12.

9
10 Again, on page 8, line 12 – page 9, line 4, Staff does not believe its proposal would violate
11 WREGIS' declaration requirements, as RECs derived from installations which did not
12 take an incentive in Arizona, under Staff's proposal, would not be used to meet any ACC
13 ordered REST standard, mandate or requirement.

14
15 Also, as described on page 9, line 19 – Page 10, line 5, Staff's proposal would not run
16 afoul of the Environmental Protection Agency's Green Power Partnership program
17 requirements, as under Staff's proposal, the renewable energy and RECs under question
18 would be incremental to mandatory requirements, in this case the lower REST level
19 ordered by the Commission.

1 **Q. On page 15, lines 1-3 of Ms. Martin's Direct Testimony, she indicates that in regard**
2 **to RUCO's baseline proposal, and presumably in evaluating other proposals, the**
3 **critical factor is whether the proposal disconnects kWh generated from**
4 **determination of REST compliance. Please comment.**

5 A. This perspective is inconsistent with how Arizona's current REST rules function and how
6 Staff's Track and Monitor proposal would work. When a state commission sets a
7 renewable energy standard based upon meeting a percentage of retail sales, there is no
8 way to accurately measure compliance with such a standard without measuring kWh
9 production (or at least an inexact proxy such as RECs). CRS seems to suggest that it is a
10 problem when "the numbers add up" as under the current REST rules or Staff's Track and
11 Monitor proposal.

12
13 **Q. Is it your understanding that CRS both advocates for the advancement of renewable**
14 **energy and serves as an arbitrator of what is certified as a REC or not?**

15 A. Yes. And unfortunately, it is not entirely clear to Staff from documents CRS has put forth
16 in regard to the track and record issue when CRS is advocating for certain policy
17 outcomes and when it is presenting its perspective on what can be certified as a REC or
18 not.

19
20 **Q. Does this conclude your responsive testimony?**

21 A. Yes, it does.

Staff Summary of Current and Past Arizona Corporation Commission Renewable Energy Standards

In response to a request by the Administrative Law Judge during the hearing in the Track and Record proceeding, Staff provides the following summary of past and present renewable energy standards approved by the Arizona Corporation Commission ("ACC" or "Commission"). Later in this document is a series of tables that show past up-front incentive and performance based incentives for Arizona Public Service Company ("APS"), Tucson Electric Power Company ("TEP") and UNS Electric Inc. ("UNS") from 2008 through 2013.

In the mid-1990s the Solar Portfolio Standard ("SPS") came about as part of the Commission's consideration of retail electric competition rules. The retail electric competition efforts began in 1994 and culminated in Decision No. 59943 (December 26, 1996)¹, which, among other things, implemented the SPS. The SPS was in addition to the following amounts of renewable energy capacity utilities were required to install and have operating by December 31, 2000, based on Commission Decision No. 58643 (June 1, 1994)² which approved the utilities' 1992 Integrated Resource Plans.

| Utility | Required Renewable Capacity |
|------------------------------------|-----------------------------|
| Arizona Electric Power Cooperative | 1,000 kW |
| APS | 12,000 kW |
| Citizens Utilities Company | 1,000 kW |
| TEP | 5,000 kW |

Under the SPS, starting on January 1, 1999, utilities had to procure at least 1/2 of 1 percent of their total retail energy sold competitively from new solar resources, defined as solar resources installed on or after January 1, 1997. This percentage increased to at least one percent of total retail load sold competitively starting on January 1, 2002. The SPS included only photovoltaic and solar thermal electric resources. In Decision No. 61311 (January 11, 1999)³, the Commission stayed the effectiveness of the retail electric competition rules, including the SPS. In Decision No. 61634 (April 23, 1999)⁴, the Commission, made further revisions to the electric competition rules, and voted to eliminate the SPS.

¹ In the Matter of Competition in the Provision of Electric Services throughout the State of Arizona, ACC Docket No. U-0000-94-165, Opinion and Order (Decision No. 59943) (Dec. 26, 1996).

² In Re Integrated Resource Planning, ACC Docket No. U-0000-93-052, Order (Decision No. 58643) (June 1, 1994).

³ In the Matter of Competition in the Provision of Electric Services throughout the State of Arizona; Rehearing of Decision No. 61272, Stay of the Electric Competition Rules and a Temporary Waiver from Compliance with the Electric Competition Rules, Docket No. RE-00000C-94-0165, Order (Decision No. 61311) (January 11, 1994).

⁴ In the Matter of Competition in the Provision of Electric Services throughout the State of Arizona, Docket No. RE-00000C-94-0165, Order (Decision No. 61634) (April 23, 1999).

In April 1999 a docket was initiated and a new process begun to design an Environmentally Friendly Portfolio Standard also known as the Environmental Portfolio Standard ("EPS"). In Decision No. 62506 (May 4, 2000)⁵, the Commission approved an EPS and ordered Staff to commence a rulemaking proceeding to adopt rules consistent with this decision. This process culminated in Decision No. 63364 (February 8, 2001)⁶ where the Commission approved the EPS rules.

The EPS rules expanded the eligible list of technologies to include not only photovoltaics and solar thermal electric as under the SPS, but also solar water heating, solar air conditioning, landfill gas, wind, and biomass. From 2001-2003, at least half of the portfolio kiloWatt hour ("kWh") must have been photovoltaics or solar thermal, with that percentage increasing to 60 percent from 2004 through 2012. The table below shows the percentage of retail energy sold which must have been met by renewables each year by load serving entities.

| Year | Percentage Required Under the EPS |
|-----------|-----------------------------------|
| 2001 | 0.2% |
| 2002 | 0.4% |
| 2003 | 0.6% |
| 2004 | 0.8% |
| 2005 | 1.0% |
| 2006 | 1.05% |
| 2007-2012 | 1.1% |

Costs under the EPS were to be recovered under a combination of an existing System Benefits Charge, reallocation of demand side management funds and an Environmental Portfolio Surcharge. The surcharge was capped monthly at the lesser of \$0.000875 per kWh or \$0.35 per month per residential customer, \$13.00 per month per non-residential customer, and \$39.00 per month per non-residential customer over 3,000 kW.

On January 6, 2004, the Commission directed Staff to commence a workshop to consider changes to the EPS rules. A number of workshops and open meetings were held from 2004-

⁵ In the Matter of the Generic Investigation of the Development of a Renewable Portfolio Standard as a Potential Part of the Retail Electric Completion Rules, Docket No. E-00000A-99-0205, Opinion and Order (Decision No. 62506) (May 4, 2000).

⁶ In the Matter of the Notice of Proposed Rulemaking for the Environmental Portfolio Standard, Docket No. RE-00000C-00-0377, Opinion and Order (Decision No. 63364) (February 8, 2001).

2006 regarding possible changes to the EPS rules. In Decision No. 69127 (November 14, 2006)⁷, the Commission adopted the Renewable Energy Standard and Tariff ("REST") rules. The REST rules were certified by the Attorney General's office on June 15, 2007. On July 10, 2007, Staff made a filing in the REST rules docket indicating the REST rules would become effective on August 14, 2007.

In the initial Commission decisions on the APS, TEP, and UNS REST plans in April 2008, the Commission recognized that the REST rules superseded the EPS rules and any requirements therein and that any remaining EPS funds would be used toward meeting REST requirements.

The REST rules indicate that utilities must meet requirements under the rules to ensure reliable electric service at reasonable rates. Under the REST rules, utilities had to meet a growing percentage of their retails sales with renewable energy resources, increasing from 1.25 percent in 2006 to 15 percent in 2025. The table below shows the annual overall REST requirement and the portion of the overall requirement that constitutes the distributed energy ("DE") resource carve-out. The rules indicate that this specific carve-out for DE resources was included for the purpose of improving system reliability. This carve-out began at 5 percent of the renewable requirement in 2007, rising gradually to level of 30 percent of the renewable requirement from 2012 through 2025. Utilities file a proposed annual REST plan on July 1st of each year for Commission consideration for the following calendar year. Annual compliance reports under the REST rules are filed with the Commission each April 1st. The REST rules introduced the concept of a Renewable Energy Credit ("REC"), with each REC representing each kWh derived from an Eligible Renewable Energy Resource.

| Year | Total REST Requirement | DE Carve-out Share of Total REST Requirement |
|------|------------------------|----------------------------------------------|
| 2006 | 1.25% | 0 |
| 2007 | 1.50% | 0.075% |
| 2008 | 1.75% | 0.175% |
| 2009 | 2.0% | 0.3% |
| 2010 | 2.5% | 0.5% |
| 2011 | 3.0% | 0.75% |
| 2012 | 3.5% | 1.05% |
| 2013 | 4.0% | 1.2% |
| 2014 | 4.5% | 1.35% |
| 2015 | 5.0% | 1.5% |

⁷ In the Matter of the Proposed Rulemaking for the Renewable Energy Standard and Tariff Rules, Docket No. RE-00000C-05-0030, Opinion and Order (Decision No. 69127) (November 14, 2006).

| | | |
|------------|-------|------|
| 2016 | 6.0% | 1.8% |
| 2017 | 7.0% | 2.1% |
| 2018 | 8.0% | 2.4% |
| 2019 | 9.0% | 2.7% |
| 2020 | 10.0% | 3.0% |
| 2021 | 11.0% | 3.3% |
| 2022 | 12.0% | 3.6% |
| 2023 | 13.0% | 3.9% |
| 2024 | 14.0% | 4.2% |
| After 2024 | 15.0% | 4.5% |

Decision No. 71448 (December 30, 2009) required APS to acquire new renewable energy resources with annual generation or savings of at least 1.7 million megawatt-hours to be in service by 2015. Those new resources in combination with existing commitments were estimated to be approximately 10 percent of retail sales by the end of 2015. The REST rules requirement is 5 percent for 2015.

Residential and Commercial Up-Front Incentives (“UFI”) and Commercial Performance-Based Incentives (“PBI”) for APS, TEP, and UNS

The Residential and Commercial UFIs and Commercial PBIs for APS, TEP and UNS are initially established each year in the Commissions orders approving the companies proposed implementation plans.

Residential UFIs (\$/watt)

The table below shows the approved residential UFI at the beginning of each calendar year. In some years the incentive level was reduced below the initially approved incentive level for that year.

| Year | APS | TEP | UNS |
|------|--------|--------|--------|
| 2008 | \$3.00 | \$3.00 | \$3.00 |
| 2009 | \$3.00 | \$3.00 | \$3.00 |
| 2010 | \$3.00 | \$3.00 | \$3.00 |
| 2011 | \$1.75 | \$2.00 | \$1.60 |
| 2012 | \$0.75 | \$0.75 | \$1.00 |

| | | | |
|------|--------|--------|--------|
| 2013 | \$0.10 | \$0.10 | \$0.10 |
|------|--------|--------|--------|

Commercial UFIs (\$/watt)

The table below shows the approved commercial UFI at the beginning of each calendar year. In some years the incentive level was reduced below the initially approved incentive level for that year.

| Year | APS | TEP | UNS |
|------|--------|--------|--------|
| 2008 | \$2.50 | \$2.50 | \$2.50 |
| 2009 | \$2.50 | \$2.50 | \$2.50 |
| 2010 | \$2.50 | \$2.50 | \$2.50 |
| 2011 | \$1.75 | \$1.50 | \$1.30 |
| 2012 | \$0.75 | \$0.55 | \$1.00 |
| 2013 | \$0.10 | \$0.00 | \$0.10 |

Commercial Performance-Based Incentive Caps (\$/kwh)

APS

| Year | 10-year contract | 15-year contract | 20-year contract |
|------|------------------|------------------|------------------|
| 2008 | \$0.202 | \$0.187 | \$0.180 |
| 2009 | \$0.202 | \$0.187 | \$0.180 |
| 2010 | \$0.182 | \$0.168 | \$0.162 |
| 2011 | \$0.140 | \$0.130 | \$0.125 |
| 2012 | \$0.084 | \$0.082 | \$0.080 |
| 2013 | \$0 | \$0 | \$0 |

TEP

| | Contract Length | | |
|--|-----------------|---------|---------|
| | 10-year | 15-year | 20-year |

Staff Summary of Current and Past Arizona Corporation
Commission Renewable Energy Standards
Page 6 of 6

| | | | |
|------|---------------|-------------|-------------|
| 2008 | \$0.202 | \$0.187 | \$0.180 |
| 2009 | \$0.202 | \$0.187 | \$0.180 |
| 2010 | \$0.182 | \$0.168 | \$0.162 |
| | Customer Size | | |
| | 50-500 kW | 501-1000 kW | Over 1 MW |
| 2011 | \$0.142 | \$0.122 | \$0.102 |
| | Customer Size | | |
| | 70-200 kW | 201-400 kW | Over 400 kW |
| 2012 | \$0.072 | \$0.068 | \$0.064 |
| 2013 | \$0.000 | \$0.000 | \$0.000 |

UNS

| | | | |
|------|-----------------|-------------|-------------|
| | Contract Length | | |
| | 10-year | 15-year | 20-year |
| 2008 | \$0.202 | \$0.187 | \$0.180 |
| 2009 | \$0.202 | \$0.187 | \$0.180 |
| 2010 | \$0.182 | \$0.168 | \$0.162 |
| | Customer Size | | |
| | 50-500 kW | 501-1000 kW | Over 1 MW |
| 2011 | \$0.142 | \$0.122 | \$0.102 |
| | Customer Size | | |
| | 70-200 kW | 201-400 kW | Over 400 kW |
| 2012 | \$0.092 | \$0.088 | \$0.084 |
| 2013 | \$0.068 | \$0.064 | \$0.060 |



BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
CHAIRMAN
GARY PIERCE
COMMISSIONER
BRENDA BURNS
COMMISSIONER
BOB BURNS
COMMISSIONER
SUSAN BITTER SMITH
COMMISSIONER

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND
GPS-3.

Docket No. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01933A-12-0296

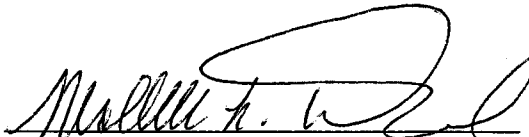
IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF
ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

Docket No. E-04204A-12-0297

1 **RUCO'S NOTICE OF FILING**

2 The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby provides
3 notice of filing the Direct Testimony of Lon Huber, in the above-referenced matter.

4 RESPECTFULLY SUBMITTED this 24th day of April, 2013.

5
6 
7 Daniel W. Pozefsky
8 Chief Counsel
9
10
11

12 AN ORIGINAL AND THIRTEEN COPIES
13 of the foregoing filed this 24th day of April,
14 2013 with:

15 Docket Control
16 Arizona Corporation Commission
17 1200 West Washington
18 Phoenix, Arizona 85007

19 COPIES of the foregoing hand delivered/
20 mailed this 24th day of April, 2013 to:

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22 Administrative Law Judge
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By Cheryl Fraulob
Cheryl Fraulob

ARIZONA PUBLIC SERVICE COMPANY
TUCSON ELECTRIC POWER COMPANY
UNS ELECTRIC, INC.

DOCKET NO. E-01345A-10-0394
DOCKET NO. E-01345A-12-0290
DOCKET NO. E-01933A-12-0296
DOCKET NO. E-04204A-12-0297

DIRECT TESTIMONY

OF

LON HUBER

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

APRIL 24, 2013

INTRODUCTION

Q. Please state your name, position, employer and address.

A. Lon Huber. I am a consultant for Arizona's Residential Utility Consumer Office ("RUCO"), 1110 W. Washington, Ste 220, Phoenix, AZ 85007.

Q. Please state your educational background and work experience.

A. I started working in the renewable energy field in 2007 at the Arizona Research Institute for Solar Energy (AzRISE) at The University of Arizona. I became a solar energy policy fellow in Washington DC for a congressional office in 2009. In 2010, I became the Governmental Affairs staffer for TFS Solar, an integrator based in Tucson. I was hired by Suntech America in 2011 as a Manager of Regional Policy where I was the point person for the company in every key solar market except California and Hawaii. During that time I was elected Arizona State Lead by member companies in the Solar Energy Industry Association (SEIA). In 2013, I moved to my own consulting firm .

I obtained a Bachelor of Science in Public Administration degree, specializing in Public Policy and Management, from the University of Arizona in 2009. I also received a Masters of Business Administration from the Eller College of Management at the same university.

1 **Q. Please state the purpose of your testimony.**

2 A. The purpose of my testimony is to present RUCO's recommendations
3 regarding renewable energy credit (REC) transfer and compliance
4 accounting mechanisms for Arizona's renewable energy standard.
5

6 **Q. By way of background, please explain REC transfers and the issue**
7 **that is before the Commission.**

8 A. In the present system, utilities offer incentives to prospective distributed
9 generation (DG) renewable energy system owners. This incentive is
10 designed to facilitate the installation of the system and the transfer of
11 renewable energy credits to the utility over a particular timeframe. The
12 utility then uses those acquired RECs to show compliance as specified in
13 A.A.C. R14-2-1805.
14

15 At the moment, it appears that the residential solar market and perhaps a
16 limited number of commercial sectors are on the verge of no longer
17 needing an incentive to facilitate installations. If no incentive is taken, the
18 utility will not be able to acquire RECs in the traditional manner. If this
19 occurs, and continues to occur for a sustained period of time, then utilities
20 will have to establish a new mechanism to induce REC transfer to meet
21 compliance with the distributed generation portion of the renewable
22 energy standard. The alternative to the formation of a new inducement for

1 RECs would be to change the rules of the renewable energy standard in
2 such a way that makes the issue of REC attainment irrelevant.

3
4 **Q. Is RUCO holding its own workshop on this issue? If so, when and**
5 **why?**

6 **A.** Yes. May 3, 2013. RUCO believes that the current system of REC
7 transfer and the viability of alternative mechanisms could be greatly
8 impacted by the outcome of the net metering technical conference and
9 subsequent Commission decision. Since this issue is complex with diverse
10 interests and is likely to significantly impact the future of solar in Arizona,
11 the aim is to gather as much information as possible. To that end, RUCO
12 is holding a workshop with the purpose of gathering insight and data from
13 various stakeholders across the state and nation. This will aid us in
14 forming a policy that best fits the interests of ratepayers in Arizona.

15
16 Since key data from various stakeholders will be forthcoming along with
17 discussions on future business models for distributed generation in
18 Arizona, RUCO is still finalizing its position. Consequently, RUCO
19 reserves the right to, and intends to supplement its position in forthcoming
20 testimony.

1 **Q. Does RUCO have a set of guiding principles for policy formulation in**
2 **this matter?**

3 A. RUCO believes that the following guidelines should be used when forming
4 a solution to the REC transfer dilemma:

- 5 • Presents little to no additional cost to ratepayers
- 6 • Statewide applicability with ease
- 7 • Solves utility compliance concerns within a reasonable timeframe
- 8 • Maintains property rights of solar investors (REC integrity)
- 9 • Aligns with forthcoming net metering decision

10 While a perfect solution would encompass all of these principles, RUCO
11 recognizes that the complexity and fluidity of this subject matter might
12 hamper the formation of such an aspirational policy. In which case, RUCO
13 will aim to put forward a policy solution that satisfies as many of the above
14 guidelines as possible.


*do have at
retained
that policy*

15
16 **Q. Does RUCO believe there is need to update the Commission's**
17 **policy?**

18 A. RUCO believes that solar energy, the main component of Arizona's
19 renewable energy sector, presents a much different value proposition to
20 both participating and non-participating rate payers than in years past.

21 • Dramatic cost declines and other influencers have propelled residential
22 distributed generation (DG) to a point where rate design, not incentives, is
23 currently the main market driver. This change in circumstances, to have
24 happened so far in advance of the state's renewable energy standard
25 target date of 2025, creates a policy issue.

*deliberation
of
needed*



1 The question now is whether this is a short term issue that will get
2 resolved in due course. For example, through rate design changes,
3 federal policy, new utility/industry business models, etc. Or if it represents
4 a long-term policy issue?

5
6 At this juncture, RUCO is unsure. Thus, the need to update the policy, and
7 more importantly, the degree and substance of the update, is ambiguous
8 at this point in time.

9
10 **Q. What is RUCO's initial policy position?**

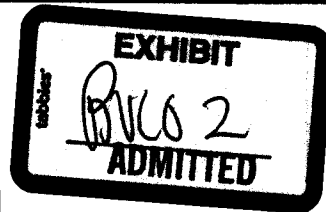
11 A. RUCO, as previously mentioned, is still in the process of finalizing a policy
12 position. One possible policy solution would be a Rule change – which
13 would change the definition of compliance for the distributed generation
14 portion of the renewable energy standard. The definition change would
15 move DG compliance from a system based on retired RECs to a system
16 based on null electricity (kWhs stripped of their environmental attributes)
17 from customer cited renewable systems hosted on a utility's grid
18 (distribution system). Under this system, the utilities could not claim any
19 renewable energy attributes from those systems. However, the utility
20 would still be required to ensure a certain amount of DG system "hosting"
21 or customer cited "fixed rate/non-fuel based electricity" (or whichever
22 definition best ensures the integrity of the RECs) on their grid.

1 The difference between the current DG carve out and this system would
2 be that under the definition change Arizona may not have the ability to
3 claim the renewable energy attributes of some customer cited systems
4 especially if solar investors sell their RECs out of state. Additionally, the
5 utilities could not claim they are receiving 15% of retail sales from
6 renewable energy by 2025 unless they acquired additional DG RECs or
7 installed more utility scale systems. It is important to note that these
8 situations could also occur under a framework with no DG carve out.

9
10 If written carefully and made clear to the public, the above definition
11 change may retain REC integrity for solar investors as well as meet all the
12 guidelines mentioned previously. RUCO intends to ascertain the feasibility
13 of such a policy in the coming weeks.

14
15 **Q. Does this include your direct testimony?**

16 **A. Yes**
17



BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
CHAIRMAN
GARY PIERCE
COMMISSIONER
BRENDA BURNS
COMMISSIONER
BOB BURNS
COMMISSIONER
SUSAN BITTER SMITH
COMMISSIONER

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND
GPS-3.

Docket No. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF
ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

Docket No. E-04204A-12-0297

1 **RUCO'S NOTICE OF FILING**

2 The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby provides
3 notice of filing the Rebuttal Testimony of Lon Huber, in the above-referenced matter.

4 RESPECTFULLY SUBMITTED this 8th day of May, 2013.

5
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7 Daniel W. Pozefsky
8 Chief Counsel
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12 AN ORIGINAL AND THIRTEEN COPIES
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16 Arizona Corporation Commission
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22 Administrative Law Judge
23 Hearing Division
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Cheryl Fraulob

ARIZONA PUBLIC SERVICE COMPANY
TUCSON ELECTRIC POWER COMPANY
UNS ELECTRIC, INC.

DOCKET NO. E-01345A-10-0394
DOCKET NO. E-01345A-12-0290
DOCKET NO. E-01933A-12-0296
DOCKET NO. E-04204A-12-0297

REBUTTAL TESTIMONY
OF
LON HUBER

MAY 8, 2013

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INTRODUCTION

Q. Please state your name, position, employer and address.

A. Lon Huber. I am a consultant for Arizona's Residential Utility Consumer Office ("RUCO"), 1110 W. Washington, Suite 220, Phoenix, AZ 85007.

Q. Please state the purpose of your rebuttal testimony.

A. The purpose of my testimony is to provide a short recap of the RUCO sponsored workshop on May 3rd as well as present RUCO's recommendations regarding renewable energy credit (REC) transfer and compliance accounting mechanisms for Arizona's renewable energy standard.

Q. How is your rebuttal testimony organized?

A. My rebuttal testimony is broken down into three parts: a brief summary of stakeholder positions as communicated in the May 3rd workshop, RUCO's analysis of the policy positions of main intervening parties, and RUCO's policy recommendation.

SUMMARY OF STAKEHOLDER POSITIONS

Q. Please briefly state the position of stakeholders as perceived by RUCO during the May 3rd workshop.

A. I will start by attempting to summarize the positions of the three principle stakeholder groups. Please note that the transcript of the event was not

1 yet available to draw upon and RUCO reserves the right to modify or
2 expand upon the answers provided below. RUCO will also post the
3 transcript to the docket for the other parties to access.

4
5 Utilities – Arizona Public Service (APS) and Tucson Electric Power (TEP)
6 appear to be aligned around the same policy solution, which is to eliminate
7 the distributed energy (DE) carve-out. The rationale was that this was a
8 simple, cost effective way to address the issue of the inability to comply
9 with RES rules in the absence of a cash incentive. It was argued that the
10 market for distributed energy has reached a point where cash incentives
11 are no longer needed to drive demand. In the short run, the utilities are
12 advocating for a waiver of the DE requirements. The longer term policy
13 solution would be to open the Renewable Energy Standard and Tariff
14 (REST) rules and explicitly strike the DE carve-out.

15
16 Solar Industry – Representatives of several local solar installation
17 companies as well as a representative from the Solar Energy Industries
18 Association spoke at the workshop. The common message was that the
19 market is turbulent and that the possible policy outcomes of the net
20 metering related technical workshop could change the realities of the
21 market substantially. There was also concern that the market may not be
22 as strong as in years past. This could be particularly acute for the solar hot
23 water market.

1 Renewable energy market certifiers – Two organizations working with
2 renewable energy credits (REC) spoke at the conference. The common
3 message was to be very careful in how the policy to solve the REC issue
4 is crafted. Some policies such as Track and Record invalidate RECs and
5 the utility must be careful in regards to what it is claiming in the event that
6 they do not actually receive a system's RECs. Also, solutions that involve
7 opening up the REST rules to change compliance definitions would have
8 to be extremely well crafted and quite complicated in order to not violate
9 FTC guidelines.

10
11 **Q. Please state any other relevant findings RUCO discovered during the**
12 **May 3rd workshop.**

13 **A.**

- 14 • There is some variety in REC ownership models among states. For
15 instance, in California the solar customer maintains REC ownership
16 unless there is net excess generation at the end of the year. In which
17 case, the utility owns that portion of excess system output.
- 18 • DE RECs can satisfy the utility scale requirement. If excess DE RECs are
19 supplied, utilities are able to apply those RECs to their utility scale
20 requirement. Currently this could not occur the other way around.
- 21 • There have been REC sales between utilities in Arizona. There have also
22 been DE REC sales between solar companies and utilities. For example,

1 between Navopache Electric Cooperative and Abengoa Solar there have
2 been sales at 6 cents/REC.

- 3 • There is a disconnect between REC value and environmental attributes.
4 RECs have been used more as facilitator of system installs than an
5 accounting mechanism for the environmental attributes. At some point the
6 incentive level may have fallen below the actual environmental value solar
7 energy provides.
- 8 • According to the Federal Trade Commission, one cannot claim ownership
9 of, or power by, renewable energy unless you own the RECs. Under a
10 tracking framework the utilities could not claim that they have a three
11 percent DE penetration level if they only own the RECs to two percent of
12 those installs. In theory, system owners could sell their RECs to a party in
13 another state. Therefore, a utility filing a report that shows that a system's
14 output as solar would be double counting. It comes down to wording. The
15 utilities could say, "There are 1000 kWhs from solar PV systems hosted
16 on our grid that we do not own the renewable energy attributes to."
- 17 • In Tucson Electric service territory, one market player is the key driver
18 behind a large share of market demand.
- 19 • There can be no penalty for REST under compliance.
- 20 • The utilities may run out of residential PV incentive funds well before the
21 4th quarter of 2013.

**RUCO'S ANALYSIS OF THE POLICY POSITIONS OF MAIN INTERVENING
PARTIES**

**Q. Please provide RUCO's perspective on the policy recommendations
of the intervening parties.**

A.

1. Waiving the DE carve-out – RUCO is reluctant to strike the DE carve-out for two primary reasons. First, RUCO is aligned with ACC Staff's view that removal of the carve-out is a substantive change to Commission policy. Second, the cost effectiveness of such a move is unclear.
2. Establishing an auction mechanism – Several parties have suggested establishing an auction system whereby utilities purchase RECs from system owners that do not take an incentive. RUCO sees this as violating some of the key principles laid out in our prior testimony. Not only could it be costly to administer and procure RECs, but it would be challenging to apply statewide, especially for smaller utilities. One could impose a cap on the costs; however, there would be uncertainty as to whether or not there would be enough funds to encourage REC sales.
3. Track and Monitor – RUCO appreciates Staff's attempt to address this complex issue. While the policy, as described by Bob Gray, would most certainly constitute double counting, it could be modified to ensure REC integrity. RUCO asks that if this policy is adopted, the language be open to modification in a way that protects REC integrity. RUCO welcomes constructive policy proposals such as the one Staff put forward. In fact, it

1 is very similar to RUCO's initial policy position, both in concept and
2 outcome; it is just the delivery that needs modification.

3
4 **RUCO'S POLICY RECOMMENDATION**

5 **Q. What is RUCO's policy recommendation to solve the REC transfer**
6 **issue?**

7 A. As stated in previous testimony, finding a solution in an ever changing
8 market presents a unique challenge. In addition to balancing the concerns
9 of each major stakeholder, one has to ascertain whether or not this is a
10 short term issue or a more systemic issue for years to come. Therefore,
11 RUCO suggests giving the process time. The major utilities are years
12 ahead in compliance, which allows the Commission some breathing room.
13 There is no reason why the Commission cannot take the necessary time
14 to get this right. As Commissioner Bitter Smith pointed out in her letter to
15 the docket dated May 2nd 2013, the matters the technical conference is
16 tackling and putting up for Commission consideration are "significant
17 public policy matters." RUCO strongly believes that the current system of
18 REC transfer and the viability of potential policies solutions (including
19 those presented above) could be greatly impacted by the end result of the
20 technical conference and subsequent Commission decision.

1 **Q. In previous testimony you mentioned uncertainty as to whether or**
2 **not this REC transfer dilemma is a long term issue, has RUCO's**
3 **position changed since the May 3rd workshop?**

4 A. No. It is still RUCO's belief that this issue could work itself out through
5 possible outcomes of the technical conference or changing market
6 dynamics. It is too early to tell.

7
8 **Q. What could be the end result of the technical conference?**

9 A. Net metering could be significantly revised, which may dramatically reduce
10 the amount of installations taking place without the traditional incentive for
11 the REC transaction. A modified or entirely new transaction between the
12 utility and DE adopters could be formed. If the transaction has an option
13 that incorporates the value of the environmental attributes into the
14 exchange, this would solve the REC issue. Finally, we could be left with
15 the status quo. While there is uncertainty in terms of market dynamics,
16 most likely this would be the situation requiring a longer term policy
17 update.

18
19 **Q. What if the policy outcome of the technical conference is not**
20 **adopted for some time?**

21 A. As a backstop, RUCO recommends splitting the RECs 50/50 between the
22 system owner and the utility. This could start one year from the end of this

1 proceeding or sooner if deemed appropriate. For example, when the utility
2 runs out of incentive funds.

3
4 **Q. Please explain this REC sharing policy in more detail.**

5 A. RUCO sees both the system owner/investor and the utility as partners.
6 One provides capital and a space to host the system, the other integrates
7 the system safely into the larger grid. This is not a judgment on who
8 provides more value, it is simply an acknowledgment that both parties
9 work together to bring DE technology online. The REC splitting policy
10 would only apply to interconnected systems. Moreover, commercial
11 customers would be allowed to retain 100 percent of their RECs if they
12 can prove they are required to meet an internal or external standard that
13 demands retired RECs as proof of compliance.

14
15 **Q. What are some benefits of a REC sharing policy?**

16 A. In terms of direct REC acquisition costs, it is less expensive than the
17 option of striking the DE carve-out. If DE resources proliferate, the policy
18 could yield free RECs to utilities that could then offset the need for utility
19 scale purchases. RUCO also feels that this policy satisfies many of our
20 guiding principles:

- 21 • Presents little to no additional cost to ratepayers
- 22 • Applies statewide with ease

- 1 • (Helps to) solve utility compliance concerns within a reasonable
- 2 timeframe
- 3 • (Helps to) maintain property rights of solar investors (REC integrity)
- 4 • Aligns with forthcoming net metering decision
- 5

6 **Q. Please expand on REC acquisition costs.**

7 A. Strictly speaking to direct REC acquisition costs - the current technical
8 conference process is researching other costs of DE - eliminating the DE
9 carve-out would require utilities to fill in the remaining portion with utility
10 scale resources (or in a twist of irony, procure DE RECs retroactively from
11 system owners). I approximate the savings to be around 3-4 cents/kWh for
12 each utility scale REC a DE REC replaces. I arrive at that figure by
13 assuming that the above market cost of utility scale procurement is in that
14 range. Under a REC splitting system, the need for utility scale resources
15 to fill the void left from eliminating the carve-out is reduced.

16

17 **Q. Is this REC split concept a long term policy solution?**

18 A. RUCO is not designing this to be a long term policy solution; nevertheless,
19 it may be able to fill that role. RUCO sees this as a stop gap to help
20 alleviate under-compliance concerns while at the same time protecting
21 some property rights. This is meant to buy time until the issue works itself
22 out or the crafting of a more holistic policy update is completed.

1 **Q. Could this be construed as a taking of property rights?**

2 A. Not in RUCO's view. Nonetheless, it is meant to be viewed as temporary
3 compromise based on each party's role in bringing on DE resources. No
4 one is getting 100 percent of what they are seeking.

5
6 **Q. What about the concern of accurately capturing what the market is**
7 **doing?**

8 A. RUCO's feeling is that this policy is as close as one can get while
9 balancing the concerns of all stakeholders and not going through a lengthy
10 revision of the REST rules.

11
12 **Q. What about a temporary waiver?**

13 A. RUCO does not view it necessary to issue a temporary waiver because
14 the Commission already has the authority to decide on the adoption of a
15 remediation plan, or not, depending on the circumstance. Only Arizona's
16 smaller utilities could fall behind with compliance in the next few years.
17 This assumes that the 50 percent REC split, in conjunction with any
18 incentive plan the utility offers, does not lead to needed compliance
19 numbers. Again, if it is determined that the reason they are behind has to
20 do with system owners not taking the incentive, the Commission has the
21 authority to not assess any penalty to the utility allowing for more time for
22 a solution to be crafted and implemented.

23

1 **Q. What about the original policy RUCO was exploring?**

2 A. Due to the complexity and need to modify the REST rules, RUCO sees
3 our original policy as a permanent policy update for a long term problem.
4 As stated, such a policy might not be needed. RUCO's REC sharing policy
5 is meant to fill in as a bridge until there is a clear course of action.

6

7 **Q. Does this conclude your direct testimony?**

8 A. Yes.

9



BEFORE THE ARIZONA CORPORATION COMMISSION

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CHAIRMAN
GARY PIERCE
COMMISSIONER
BRENDA BURNS
COMMISSIONER
BOB BURNS
COMMISSIONER
SUSAN BITTER SMITH
COMMISSIONER

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IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND
GPS-3.

Docket No. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY
FOR APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF
ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

Docket No. E-04204A-12-0297

1 **RUCO'S NOTICE OF FILING**

2 The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby provides
3 notice of filing the Surrebuttal Testimony of Lon Huber, in the above-referenced matter.

4 RESPECTFULLY SUBMITTED this 22nd day of May, 2013.

5 
6

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8 Chief Counsel
9
10
11

12 AN ORIGINAL AND THIRTEEN COPIES
13 of the foregoing filed this 22nd day of May,
14 2013 with:

15 Docket Control
16 Arizona Corporation Commission
17 1200 West Washington
18 Phoenix, Arizona 85007

19 COPIES of the foregoing hand delivered/
20 mailed this 22nd day of May, 2013 to:

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UNS ELECTRIC, INC.

DOCKET NO. E-01345A-10-0394
DOCKET NO. E-01345A-12-0290
DOCKET NO. E-01933A-12-0296
DOCKET NO. E-04204A-12-0297

SURREBUTTAL TESTIMONY
OF
LON HUBER

MAY 22, 2013

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INTRODUCTION

Q. Please state your name, position, employer and address.

A. Lon Huber. I am a consultant for the Arizona Residential Utility Consumer Office ("RUCO"), 1110 W. Washington, Suite 220, Phoenix, AZ 85007.

Q. Please state the purpose of your Surrebuttal Testimony.

A. The purpose of my Surrebuttal Testimony is to respond to the pre-filed Rebuttal Testimony of Carmine Tilghman for Tucson Electric Power Company (TEP) and UNS Electric, Inc (UNS).

Q. Please summarize your Surrebuttal Testimony?

A. RUCO would like to stress that under Track and Monitor, or any policy that directly reduces renewable energy targets based on the kWh output of a customer's system, an invalidation of a customer's RECs would occur due to a double counting violation. Although the customer would technically still own his or her RECs, those RECs would be barred from sale in any official market. Furthermore, RUCO believes that this preceding is not the appropriate vehicle to investigate a significant revision of the REST rules and/or inquiry into DE subsidies.

SURREBUTTAL TO TEP

Q. Does RUCO have any comments regarding Mr. Tilghman's testimony on behalf of TEP and UNS?

A. Yes. RUCO appreciates TEP's effort to put forward policies aimed at solving the REC transfer issue. RUCO also appreciates TEP's willingness to generally support Staff's Track and Monitor, which is admittedly very similar to TEP's Track and Reduce proposal. However, the assertion that the Track and Monitor proposal would afford the system owner the ability to sell RECs into voluntary markets is misguided. There is a clear double counting violation; a one for one offset is taking place. Put simply, when a homeowner's renewable energy system produces one kWh of electricity, the DE requirement of the REST is then reduced by one kWh. According to the U.S. Department of Energy:

"Double counting occurs when a) more than one party at the same time claims the renewable energy attributes from renewable energy generation (as either RECs or as renewable energy), i.e., the renewable energy is "double sold" to other customers."¹

According to Center for Resource Solutions' *Best Practices in Public Claims for Green Power Purchases and Sales*:

"Once a REC is claimed and retired, either by public statements, use toward a state RPS, retired in a tracking system or through other means, it is considered double-counting of the benefits of the renewable energy generation if another party claims the retired REC."

¹ U.S. Department of Energy. Renewable Energy Requirement Guidance for EP ACT 2005 and Executive Order 13423. 2008.

1 As stated on page eight of Mr. Tilghman's Rebuttal Testimony:

2 ".....Staff's Track and Monitor mechanism would
3 reduce the utilities' percentage requirement by the
4 amount of renewable energy interconnected to their
5 systems - and allow the utilities to meet the remaining
6 RES percentage requirement through the use of the
7 other eligible renewable energy resources."
8

9 This is a clear double counting issue, both in terms of public statements
10 and use towards the state's renewable energy goals. By applying a
11 customer's energy generation towards a renewable energy standard, the
12 utility is making claims to the renewable energy attributes of the
13 customer's system. The double counting is particularly stark when a
14 customer sells their RECs out of state. Any claims to those elections go to
15 the REC buyer. The producer is now just generating null electricity. If a
16 utility were to count this null electricity as renewable energy and apply it
17 toward their renewable energy obligations, a double counting would occur.
18

19 **Q. How would RUCO recommend Staff's proposal be modified to**
20 **maintain the integrity of the RECs?**

21 **A.** RUCO would recommend that a baseline for DE renewable energy uptake
22 be set that is not explicitly tied to the REST, perhaps based off of a
23 percentage of historic or projected market levels. If the market hits that
24 baseline by the end of the year, then the DE portion of the REST is
25 reduced by that year's incremental requirement.
26

1 **Q. Can you please provide an example of how this would work?**

2 A. For hypothetical purposes only, say the average historical market level for
3 residential DE in a utility's service territory is 6 MWs. Under a revised
4 Track and Monitor, a target of say 4.5 MW would be set (or some
5 percentage of the historic average). If by December 31st of the year that
6 level has been reached, the incremental amount of that year's residential
7 DE target, currently set to ~ 0.075 percent of retail sales until 2015-2016,
8 would be subtracted from the DE carve-out. If the trigger is not reached
9 and the utility is under compliance, then the traditional course of action in
10 place today would be followed. Because any past year that met the
11 threshold was subtracted from the utility's obligation, the utility would not
12 have to catch-up for years past.

13
14 **Q. So this revision captures market activity and reduces REST**
15 **obligations if the market is deemed self-sustaining?**

16 A. Yes. The revision makes Track and Monitor a policy that judges the
17 market's self-sufficiency and does not create undue burden on ratepayers.
18 The suggested policy revision essentially gets to the heart of the matter -
19 what to do if the market is robust enough to carry itself. The only intricacy
20 is determining the methodology in setting the baseline figure for DE. If
21 Track and Monitor is adopted with the above policy revision, RUCO
22 recommends that the methodology underpinning the threshold for each
23 market sector (residential and commercial) be established in a technical

1 session with input from all parties. Again, the goal would be to find the
2 level of market activity that indicates self-sufficiency.

3
4 **Q. Would this revision to Track and Monitor maintain REC integrity?**

5 A. Yes, RUCO believes that it will. However, the final wording and
6 implementation must be done carefully. Once a particular year's threshold
7 for market self-sufficiency is met, the DE portion of the carve-out is
8 lowered. This means that the utilities cannot claim the renewable energy
9 in public statements and that the REST is slightly reduced downward from
10 15 percent. Alternatively, the utility scale portion of the REST could fill in
11 for the reduction, which would mimic the outcome of the utilities' proposals
12 to strike the DE carve-out. Thus it would retain the state's 15 percent
13 renewable energy figure.

14
15 **Q. Would the REST rules have to be revised?**

16 A. RUCO does not believe so. Once a market hits the proper threshold, and
17 is labeled self-sufficient for that year, the Commission would waive that
18 year's incremental amount of DE from the utility's requirement.

1 **Q. Does RUCO find it inconsistent to state that utility incentives are not**
2 **currently the main market driver of DE demand while at the same**
3 **time advocating against elimination of the DE carve-out at this**
4 **junction?**

5 **A. No.** Mr. Tilghman's argument is predicated on the fact that utilities have
6 no control over the market; therefore, the DE portion of the requirement
7 should be eliminated. RUCO's point is twofold:

8 1. This situation may be temporary. There might not need to be a
9 burdensome reopening of the REST rules if the issue resolves itself
10 in the near term. RUCO is not suggesting the Commission should
11 wait indefinitely until an unknown policy on the federal or state level
12 may or may not be enacted. Rather, let the pending debate around
13 DE play out. Just recently the Commission started the process of
14 having a formal docket around DE subsidies/net metering. This
15 could very well lead to a significant redesign of DE market
16 structures in the near future. This debate is imminent and the
17 outcome could be sweeping.

18 2. If the REC transfer issue was deemed to be a long-term problem
19 there are other policy solutions other than eliminating the DE carve-
20 out to solve it.

21 Also, Mr. Tilghman goes on to suggest that even if the REC transfer issue
22 is short term, the DE carve-out might not be cost effective. Mr. Tilghman
23 states on page four of his Rebuttal Testimony:

1 "...now is the time for the Commission to address
2 utility subsidies for DG and whether the DG carve out
3 should continue."
4

5 **Q. Is the DE carve-out cost effective?**

6 A RUCO is not prepared to answer that question at this time. RUCO also
7 considers it outside the scope of this hearing. Again, there is an ongoing
8 process that may turn into a formal hearing in which the costs and benefits
9 of DE are examined.
10

11 **Q. What is RUCO's view around the scope of this hearing?**

12 A. While RUCO welcomes a robust inquiry into DE subsidies and REST
13 design, RUCO disagrees that it is within the scope of this hearing. It would
14 be unfitting to stuff an issue of such complexity into a hearing tasked to
15 "consider the proposed 'Track and Record' mechanism as well as
16 potential alternatives thereto." In fact, this process was originally set to
17 also consider an amendment dealing with REST design; however, the
18 Commission saw it fit to remove it from the hearing's scope. Finally, as
19 stated, the Commission is moving towards a hearing on DE costs and net
20 metering.
21

22 **Q. What are RUCO's thoughts in terms of timing around this matter?**

23 A. RUCO shares the sentiment that this issue should be resolved within a
24 reasonable timeframe. But the Commission should not put the cart before
25 the horse - why start to implement a potentially inflexible policy solution

1 such as eliminating the DE carve-out now, when a fix could occur through
2 the upcoming net metering/DE cost discussions? Furthermore, why
3 invalidate customer's RECs in haste, or setup a potentially costly auction
4 mechanism before other avenues are exhausted?

*direct
indirect*

5
6 **Q. What are the cost implications of waiting?**

7 A. RUCO does not see any direct cost impacts related to a reasonable
8 waiting period. Mr. Tilghman notes on page nine of his Rebuttal
9 Testimony:

10 "To wait until other policy decisions are made will
11 mean ratepayers will pay more than is necessary to
12 procure the same amount of renewable energy."
13

14 In RUCO's view, it is unclear as to how waiting for a year would cost more
15 to ratepayers. For instance, what is the difference financially to TEP
16 ratepayers if the carve out is eliminated today or in a year from now? TEP
17 is ahead of compliance targets and in the event they fall behind, it is a
18 Commission decision whether more incentives are offered.

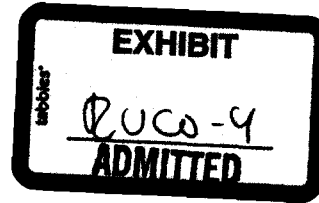
19 *- risk - require spending*

20 **Q. Does this conclude your surrebuttal testimony?**

21 A. Yes
22

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
CHAIRMAN
GARY PIERCE
COMMISSIONER
BRENDA BURNS
COMMISSIONER
BOB BURNS
COMMISSIONER
SUSAN BITTER SMITH
COMMISSIONER



IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND GPS-3.

Docket No. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

Docket No. E-01345A-12-0290

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PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
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ADJUSTOR.

Docket No. E-01933A-12-0296

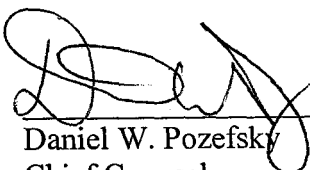
IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF
ITS 2013 RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

Docket No. E-04204A-12-0297

RUCO'S NOTICE OF FILING

1 The RESIDENTIAL UTILITY CONSUMER OFFICE ("RUCO") hereby provides notice of
2 filing the Direct Testimony of Jennifer Martin, Executive Director, Center for Resource Solutions,
3 in the above-referenced matter.

4 RESPECTFULLY SUBMITTED this 10th day of June, 2013.

5
6 
7 Daniel W. Pozefsky
8 Chief Counsel
9
10

11 AN ORIGINAL AND THIRTEEN COPIES
12 of the foregoing filed this 10th day of June
13 2013 with:

14 Docket Control
15 Arizona Corporation Commission
16 1200 West Washington
17 Phoenix, Arizona 85007

18 COPIES of the foregoing hand delivered/
19 mailed this 10th day of June, 2013 to:

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TUCSON ELECTRIC POWER COMPANY
UNS ELECTRIC, INC.

DOCKET NO. E-01345A-10-0394
DOCKET NO. E-01345A-12-0290
DOCKET NO. E-01933A-12-0296
DOCKET NO. E-04204A-12-0297

DIRECT TESTIMONY
OF
JENNIFER MARTIN, EXECUTIVE DIRECTOR
CENTER FOR RESOURCE SOLUTIONS

ON BEHALF OF
THE
RESIDENTIAL UTILITY CONSUMER OFFICE

JUNE 10, 2013

1 **Q. Please state your name and business address.**

2 A. My name is Jennifer Martin. My business address is Center for Resource
3 Solutions, 1012 Torney Ave, 2nd Floor, San Francisco, California, 94129.
4

5 **Q. By whom and in what capacity are you employed?**

6 A. I am employed by Center for Resource Solutions as Executive Director.
7

8 **Q. Please describe Center for Resource Solutions.**

9 A. Center for Resource Solutions (CRS) is a 501(c)(3) nonprofit organization
10 whose mission is to develop policy and market solutions to advance
11 sustainable energy. CRS was founded in 1997. CRS manages an array
12 of programs that aim to increase the use of renewable sources of energy
13 and mitigate climate change. CRS's programs address renewable energy
14 policy and market issues in the United States and abroad. CRS works in
15 a variety of areas, including providing expert assistance at state, regional,
16 and national levels on renewable energy policy issues; advising
17 organizations on options for using renewable energy and how to
18 appropriately describe that renewable energy use; and offering consumer
19 protection and certification programs under the Green-e brand. Launched
20 in 1997, Green-e Energy is a certification program serving the voluntary
21 renewable energy market in North America. Green-e Energy is a
22 voluntary program for sellers of green power products, and certifies utility
23 green pricing programs, competitive electricity products offered in

1 deregulated electricity markets, and renewable energy certificates (RECs).
2 Participation in the program requires adherence with the program's
3 standards—the *Green-e Energy National Standard* (National Standard)
4 and *Green-e Energy Code of Conduct and Customer Disclosure*
5 *Requirements* (Code of Conduct)—for renewable energy product quality
6 and consumer protection. The *Green-e Energy National Standard*¹ was
7 developed and is periodically revised through open stakeholder
8 engagement processes, and substantive changes to the National
9 Standard are approved by the Green-e Governance Board.

10
11 **Q. Please describe your employment history with Center for Resource**
12 **Solutions.**

13 A. I was hired by CRS in 2005 as the Director of Certification and Verification
14 Services. In 2008, I became Deputy Director, and in 2010 I became
15 Executive Director of the organization.

16
17 **Q. Please describe your duties and responsibilities as Executive**
18 **Director.**

19 A. As Executive Director, I am responsible for the overall management and
20 strategic direction of the organization. I oversee the management of
21 CRS's programs, including the Green-e Energy program.

22

¹ Center for Resource Solutions, *Green-e Energy National Standard* http://www.green-e.org/getcert_re_stan.shtml (accessed June 5, 2013).

1 **Q. Please describe your qualifications.**

2 A. I have over 20 years of experience in the electric power and renewable
3 energy industries. I have worked for private sector and nonprofit
4 organizations addressing renewable energy, energy efficiency, distributed
5 generation, electricity markets, technology development, and electricity
6 sector and climate-change policy and regulation. I am a member of the
7 Western Renewable Energy Generation Information System (WREGIS)
8 Stakeholder Advisory Committee, a member of the State-Federal RPS
9 Collaborative Advisory Group, and I served as technical chairperson of the
10 WREGIS Operating Rules Committee. I earned my Bachelor of Arts
11 degree from Pomona College and a Master of Public Policy from Duke
12 University.

13
14 **Q. What is the purpose of your testimony?**

15 A. The purpose of my testimony is to evaluate the proposals before the
16 Commission with regards to double counting under the guidelines of the
17 Green-e Energy program.

18
19 **Q. To help explain double counting under your standard, could you first
20 explain the voluntary market in which your standard operates and its
21 interaction with the REST market?**

22 A. The compliance market refers to the purchase of renewable energy in
23 order to comply with a specific law or mandate. In the U.S., the

1 compliance market mostly comprises renewable electricity or REC
2 purchases² made to meet Renewable Portfolio Standards (RPS)
3 requirements that many states have implemented. Arizona's Renewable
4 Energy Standard and Tariff (REST)³ creates the compliance market in
5 Arizona.

6
7 The voluntary market refers to purchases of renewable energy that are
8 made above and beyond the minimum amounts that states require utilities
9 or energy service providers to deliver or purchase on behalf of their retail
10 load. Both residential and nonresidential electricity consumers can
11 participate in the voluntary market by electing to purchase renewable
12 energy offered through their utility's green power program, from an
13 electricity service provider in a deregulated state that offers a green power
14 option, or by purchasing RECs. A residential homeowner, for example,
15 could sign up with their electricity provider to buy 100% renewable energy,
16 instead of simply receiving the smaller amount of renewables they would
17 get as part of the regular system mix. This additional renewable energy
18 that was specifically purchased through the green pricing program is
19 additional to the electric service provider's RPS obligations. Another
20 example of the voluntary market is when a corporation or governmental
21 organization purchases RECs to match with their grid electricity purchases
22 in order to obtain green power points for new construction under the U.S.

² Throughout this testimony, renewable electricity refers to electrical energy and a REC delivered as a bundled product.

³ Ariz. Admin. Code, 14-2-1801 et seq.

1 Green Building Council's LEED program, meet renewable energy
2 purchasing requirements from an Executive Order⁴ in the case of federal
3 agencies, or for carbon-accounting purposes in their sustainability report.
4 In all of these cases, one of the values that the electricity user is receiving
5 for their purchase is a unique claim to the ownership and use of the
6 renewable energy attributes.

7
8 CRS's role in this market is to protect the renewable energy purchasers
9 against double counting and false claims, and ensure the purchaser of
10 renewable energy that they are receiving all of the attributes of renewable
11 energy generation that they purchased.

12
13 **Q. How much of the voluntary market do you certify?**

14 **A.** According to the National Renewable Energy Laboratory and verification
15 data obtained through annual Green-e Energy reporting, Green-e Energy
16 certifies and verifies roughly two-thirds of the U.S. voluntary retail
17 renewable energy market and more than ninety percent of U.S. voluntary
18 retail renewable energy certificate (REC) sales.⁵

19
20

⁴ U.S. Department of Energy, Renewable Energy Requirement Guidance for EPACT 2005 and Executive Order 13423 (Jan. 28, 2008), http://www1.eere.energy.gov/femp/pdfs/epact05_fedrenewenergyguid.pdf.

⁵ National Renewable Energy Laboratory, *Market Brief: Status of the Voluntary Renewable Energy Certificate Market (2011 Data)* available at <http://www.nrel.gov/docs/fy12osti/56128.pdf> at 5; and Center for Resource Solutions, *2011 Green-e Verification Report* <http://www.green-e.org/publications.shtml> at 4-6, (accessed June 5, 2013).

1 Q. Could you describe the voluntary market in Arizona?

2 A. In 2011, Green-e Energy verification found that Arizona had 2,986
3 residential customers and 146 non-residential customers purchase
4 renewable energy in the voluntary market, and Arizona renewable
5 generators generated 29,997 MWh that were sold into the voluntary REC
6 market to customers inside and outside of the state.⁶ There may be other
7 voluntary purchasers in Arizona and renewable energy generation sold
8 into the voluntary market from in-state generators that are not Green-e
9 Energy certified. CRS does not independently collect information on
10 renewable energy purchases and generation from non-Green-e Energy
11 certified transactions.

12
13 Some examples of sellers in the voluntary market include Arizona Public
14 Service Company, whose Green Choice Program is Green-e Energy
15 certified. Also Salt River Project's EarthWise program is certified by
16 Green-e Energy. According to the EPA's Green Power Partnership list,
17 voluntary renewable energy market purchasers in Arizona include: Apollo
18 Group, Inc., University of Phoenix, Arid Zone Trees, Arizona
19 Lithographers, ConserVentures, Evolution Beauty Technologies, Inc.,
20 Forever Resorts/Big Bend Resorts, Chisos Mountain Lodge, Forever
21 Resorts / Grand Canyon North Rim, LLC, International Student Exchange

⁶ Center for Resource Solutions, data aggregated from Green-e Energy verification of 2011 certified sales.

1 Cards, Inc., and Prime Time Thermographics.⁷ Tom Arma Studio, Inc.
2 and Tom Arma Costumes, Inc. purchase Green-e Energy certified
3 renewable energy certificates to offset 100 percent of the electricity used
4 for its entire operations.⁸ This is not an exclusive list, but is supplied for
5 illustrative purposes.

6
7 **Q. What criteria do you use to determine double counting?**

8 A. The National Standard and other Green-e Energy governing documents
9 set criteria for what constitutes double counting for the renewable
10 electricity and REC sales that Green-e Energy certifies.⁹ There are
11 several sections of Green-e Energy governing documents that describe
12 double counting and REC eligibility. One of the primary criteria of REC
13 eligibility is that the RECs have not been double counted. The National
14 Standard requires Green-e Energy certified renewable electricity and
15 RECs to be additional to any renewable energy or RECs required by state
16 or federal RPS requirements, legislation, or settlement agreements.¹⁰ It
17 states "RECs may NOT be used in a Green-e Energy certified product
18 under the following circumstances: 1) The REC or the electricity from
19 which the RECs are derived is being used simultaneously to meet a local,
20 state, or federal energy mandate or other legal requirement" and, in

⁷ U.S. Environmental Protection Agency, *Green Power Partners List*,
<http://www.epa.gov/greenpower/partners/> (accessed June 5, 2013).

⁸ Center for Resource Solutions, *Organizations Using Renewable Energy*, http://www.green-e.org/getcert_bus_participants.shtml, (accessed June 5, 2013).

⁹ *Green-e Energy criteria regarding double counting apply to both renewable electricity and REC only transactions.*

¹⁰ Center for Resource Solutions, *Green-e Energy National Standard* http://www.green-e.org/getcert_re_stan.shtml at 7-8 (accessed June 5, 2013).

1 Section E. Double Counting and Use of Utility Resources, "Renewable
2 energy or RECs (or the renewable or environmental attributes
3 incorporated in that REC) that can be legitimately claimed by another
4 party may NOT be used in Green-e Energy certified REC products."¹¹

5
6 The Code of Conduct describes double counting as "When the
7 disaggregated attributes associated with a single MWh of generation are
8 ultimately sold to or claimed by more than one consumer." The Code of
9 Conduct specifically identifies that double counting would occur where the
10 same REC is used by an electricity provider or utility to meet an
11 environmental mandate, such as an RPS, and is also used to satisfy
12 customer sales under Green-e Energy.¹² Green-e Energy Tracking
13 System Attestations, which are signed by renewable energy generators
14 participating in Green-e Energy and electronic tracking systems such as
15 WREGIS, also require signatories to declare that the renewable attributes
16 contained in the RECs have not been used to meet "any federal, state, or

¹¹ Id., ("1) When the same REC is sold by one party to more than one party, or any case where another party has a conflicting contract for the RECs or the renewable electricity; 2) When the same REC is claimed by more than one party, including any expressed or implied environmental claims made pursuant to electricity coming from a renewable energy resource, environmental labeling or disclosure requirements. This includes representing the energy from which RECs are derived as renewable in calculating another entity's product or portfolio resource mix for the purposes of marketing or disclosure; 3) When the same REC is used by an electricity provider or utility to meet an environmental mandate, such as an RPS, and is also used to satisfy customer sales under Green-e Energy; or 4) Use of one or more attributes of the renewable energy or REC by another party (see Section III.C. "Fully Aggregated Renewables" for details). This includes when a REC is simultaneously sold to represent "renewable electricity" to one party, and one or more Attributes associated with the same MWh of generation (such as CO2 reduction) are also sold, to another party.").

¹² Center for Resource Solutions, *Green-e Energy Code of Conduct and Customer Disclosure Requirements* http://www.green-e.org/getcert_re_stan.shtml at 3-4 (accessed, May 30 2013). attached.

1 local renewable energy requirement, renewable energy procurement,
2 renewable portfolio standard, or other renewable energy mandate by any
3 entity other than the party on whose behalf the Renewable Attributes are
4 retired.”¹³

5
6 Green-e Energy’s definitions of double counting are similar to other
7 organizations that set standards or guidance for the voluntary market.
8

9 **Q. What other organizations evaluate double counting in similar ways?**

10 A. There are several other organizations and authorities whose
11 interpretations of double counting are similar to Green-e Energy’s. These
12 include the U.S. Environmental Protection Agency, other certifications
13 including the U.S. Green Building Council’s LEED program, and WREGIS.
14 The U.S. Federal Trade Commission also expressed concerns about
15 double counting in its *Guides for the Use of Environmental Marketing*
16 *Claims* (Green Guides), and similar language appears in the Arizona
17 REST.
18

19 The U.S. Environmental Protection Agency has adopted rules for the
20 Green Power Partnership program that are nearly identical to the rules for
21 Green-e Energy, including definitions regarding double counting.¹⁴ Page

¹³ Center for Resource Solutions, *Tracking System Attestation*, http://www.green-e.org/verif_docs.html at 3 (accessed, May 30 2013).

¹⁴ U.S. Environmental Protection Agency, *EPA’s Green Power Partnership Requirements* <http://www.epa.gov/greenpower/pubs/> at 3 and 8 (accessed, May 30 2013).

1 two and three of the of the Green Power Partnership programs partnership
2 requirements, section IV, requires that eligible renewable electricity and
3 RECs be incremental to mandatory requirements, such as state
4 renewable portfolio standards, mandates placed on utilities, or load-
5 serving entities or consent decrees.¹⁵

6
7 Other standards and certifiers, including the U.S. Green Building Council's
8 LEED program, require that RECs and green power purchases be certified
9 by Green-e Energy or an equivalent program in order to obtain credit for
10 green power use. LEED requirements state:

11 *Engage in at least a 2-year renewable energy contract to*
12 *provide at least 35% of the building's electricity from*
13 *renewable sources, as defined by the Center for Resource*
14 *Solutions' Green-e Energy product certification requirements*
15 *or an equivalent. All purchases of green power shall be*
16 *based on the quantity of energy consumed, not the cost. If*
17 *the green power is not Green-e Energy certified, equivalence*
18 *must exist for both major Green-e Energy program criteria:*
19 *1) current green power performance standards, and 2)*
20 *independent, third-party verification that those standards are*
21 *being met by the green power supplier over time.*¹⁶
22
23

24 WREGIS is a renewable energy tracking system operated by the Western
25 Electricity Coordinating Council. WREGIS tracks renewable energy
26 generation from units that register in the system by using verified meter

¹⁵ *Id.* at 2-3.

¹⁶ U.S. Green Building Council, *LEED Green power v. 2.9* <http://www.usgbc.org/node/1731298>
(accessed, May 30 2013).

1 data and creating RECs for this generation.¹⁷ Many Western states,
2 including California, Colorado, Montana, Nevada, New Mexico, Oregon,
3 Utah, and Washington allow or require RECs be tracked in WREGIS in
4 order for the RECs to count for the state's Renewable Portfolio
5 Standard.¹⁸ WREGIS requires that RECs be fully aggregated, and that
6 none of the attributes of renewable energy generation¹⁹ are sold
7 separately or claimed or transacted outside of the WREGIS certificates.²⁰
8 If any Arizona renewable generation owners, including renewable
9 distributed generation (DG) owners, are tracking their RECs in WREGIS,
10 the sale or claiming of their RECs or renewable attributes without
11 supporting transactions of WREGIS certificates would be in violation of the

¹⁷ Western Electricity Coordination Council, *About WREGIS*

<http://www.wecc.biz/WREGIS/Pages/default.aspx> (accessed, May 30 2013).

¹⁸ Email from Andrea Coon, Dir. of WREGIS at Western Electricity Coordination Council to Alex Pennock, (May 29, 2013) (copy on file with recipient).

¹⁹ (*Environmental attributes are widely accepted as the components of RECs.*) American Bar Association, et al., *Master Renewable Energy Certificate Purchase and Sale Agreement* (Version 1.0), at iv (2007).

<http://apps.americanbar.org/environ/committees/renewableenergy/RECMasterContract.pdf>.

("Environmental Attribute" means an aspect, claim, characteristic, or benefit associated with the generation of a quantity of electricity by a Renewable Energy Facility, other than the electric energy produced, and that is capable of being measured, verified, or calculated. An Environmental Attribute may include one or more of the following identified with a particular megawatt hour of generation by a Renewable Energy Facility designated prior to Delivery: the Renewable Energy Facility's use of a particular Renewable Energy Source, avoided NOx, SOx, CO₂ or greenhouse gas emissions, avoided water use (but not water rights or other rights or credits obtained pursuant to requirements of Applicable Law in order to site and develop the Renewable Energy Facility itself) or as otherwise defined under an Applicable Program, or as agreed by the Parties. Environmental Attributes do not include production tax credits or other direct third-party subsidies for generation of electricity by any specified Renewable Energy Facility.").

²⁰ Western Electricity Coordinating Council, *WREGIS Operating Rules* (December 2010).

<http://www.wecc.biz/WREGIS/Documents/WREGIS%20Operating%20Rules%20v%205%2031%202012.pdf>. ("A WREGIS Certificate represents all Renewable and Environmental Attributes from one MWh of electricity generation from a renewable energy Generating Unit registered with WREGIS or a Certificate imported from a Compatible Registry and Tracking System and converted to a WREGIS Certificate.").

1 WREGIS Terms of Use, which require all RECs tracked in the system to
2 be fully bundled and not have attributes counted or claimed elsewhere.

3
4 The Federal Trade Commission (FTC) also identifies double counting of
5 RECs as a problem. The FTC interprets the double use of a REC or any of
6 its attributes to be misleading, stating specifically "If a marketer generates
7 renewable electricity but sells renewable energy certificates for all of that
8 electricity, it would be deceptive for the marketer to represent, directly or
9 by implication, that it uses renewable energy."²¹ Hence, not only is it
10 deceptive to represent that one is using renewable energy when the REC
11 has already been sold, but the implied use of RECs that are not owned is
12 also deceptive. In order to be consistent with the FTC, Green-e Energy will
13 not certify RECs that have been effectively claimed when they were used
14 to reduce a utility's REST obligations.²²
15

²¹ Federal Trade Commission, *Green Guides* 260.15 (d), 32-34,
<http://www.ftc.gov/opa/2012/10/greenguides.shtm> (October 1, 2012).

²² Federal Trade Commission, *Proposed Revisions to the Green Guides*, at 152 (October 2010).
Available at: <http://ftc.gov/os/fedreg/2010/october/101006greenguidesfrn.pdf>. ("Once renewable
electricity is introduced into the grid, it is physically indistinguishable from electricity generated
from conventional sources. Consumers, therefore, cannot determine for themselves the source of
the electricity flowing into their homes. Because electricity transactions can be tracked, however,
retail customers can "buy" renewable power by either: (1) purchasing renewable energy
certificates (RECs); or (2) purchasing renewable power through contracts with their utility."...
"Under the REC method, a renewable electricity generator splits its output into two components:
(1) the electricity itself; and (2) certificates representing the renewable attributes of that electricity.
Specifically, generators that produce renewable electricity sell their electricity at market prices for
conventionally produced power and then sell the renewable attributes of that electricity through
separate certificates. Organizations purchase RECs to characterize all or a portion of their
electricity usage as "renewable" by matching the certificates with the conventionally produced
electricity they normally purchase.").

1 The REST also contains language that disallows the use of renewable
2 attributes for REST compliance that have not been retained by the
3 affected utility: "If an Affected Utility trades or sells environmental pollution
4 reduction credits or any other environmental attributes associated with
5 kWh produced by an Eligible Renewable Energy Resource, the Affected
6 Utility may not apply Renewable Energy Credits derived from that same
7 kWh to satisfy the requirements of these rules."²³
8

9 **Q. Do you think that Staff's proposal of Track and Monitor could result**
10 **in double counting?**

11 A. Yes, the problem of double counting could arise. Staff's Track and
12 Monitor proposal does more than track and monitor the kWh produced by
13 eligible resources. It uses these kWh to reduce the REST requirements.
14 This use of kWh data effectively results in a claim on the renewable
15 energy value that would otherwise be included in the REC, taking value
16 from the contractual REC owner and nullifying the REC owner's ability to
17 make their own claim or sell the REC. The utility would be counting
18 renewable energy that it does not own and from which RECs were not
19 obtained for compliance with its REST obligations. This would result in a
20 claim on the REC such that Green-e Energy would not be able to certify or
21 verify the sale of the RECs to other purchasers.
22

²³ Ariz. Admin. Code, 14-2-1804(A), (E). 1812(B)(5).

1 Any proposal intended to give utilities credit for RECs or renewable energy
2 generation constitutes a claim on the REC. Such credit may be in the
3 form of a waiver of compliance obligation and does not need to be a
4 formal counting of the REC itself. If the underlying kWh is being used to
5 reach or modify a compliance obligation, then the value of the REC is
6 being taken by the utility, and according to Green-e Energy rules, any
7 other use of the REC would constitute double counting. Implementation of
8 Track and Monitor would mean that any other use of the REC (other than
9 for compliance) would constitute double counting. The same problem
10 arises from the prior Track and Record proposal wherein a utility does not
11 purchase RECs, as there is no cash incentive for distributed projects,
12 however the utility would count the RECs associated with new distributed
13 energy projects and report the volume of RECs to the Commission to
14 demonstrate compliance with the Renewable Energy Standard.

15
16 **Q. Do you think RUCO's modification of Staff's proposal, as**
17 **represented in the surrebuttal testimony of Lon Huber May 22, 2013,**
18 **creating a baseline of grid connected kW of DE and using this**
19 **baseline to determine when utilities would be granted a temporary**
20 **waiver of the DE portion of the REST, could result in double**
21 **counting?**

22 **A.** As written, where the baseline is determined by capacity opposed to kWh,
23 and it is clear that the REST is waived, rather than met, this proposal does

1 not raise issues of double counting. The critical factor in this evaluation is
2 that the proposal disconnects kWh generated from determination of REST
3 compliance.

4
5 As many of the details of this plan have not yet been solidified, but would
6 be worked out at a later time by the Commission and the parties,
7 implementation of this plan could yield different determinations. For
8 example, if the utilities are claiming to meet their REST obligations by
9 counting kWh from which they do not own the corresponding RECs, then
10 double counting could occur.

11
12 **Q. Do you think a waiver of the DE requirement could result in double**
13 **counting?**

14 **A.** If the waiver grants utilities the ability to not comply with a portion of the
15 REST, then there would be little risk of double counting. Issues arise if the
16 utilities are considered to be complying with the REST by counting RECs
17 or the underlying renewable kWh that the utilities do not own, to meet their
18 REST obligations.

19
20 **Q. Are there circumstances when a waiver of the REST could result in**
21 **double counting?**

22 **A.** The design of the waiver is important in determining whether or not double
23 counting could arise. If the waiver, now or in the future, results in a

1 determination of REST compliance by counting a REC and/or renewable
2 kWh not owned by the utility then there would be a risk of double counting.

3
4 **Q. Would establishing an auction mechanism create a risk of double**
5 **counting?**

6 A. No. Establishing an auction mechanism wherein the generator retained
7 the full value of the REC and had the option to sell that REC to the utility
8 would not risk double counting.

9
10 **Q. Does this conclude your testimony?**

11 A. Yes, it does.

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6 **BEFORE THE ARIZONA CORPORATION COMMISSION**

7 BOB STUMP, Chairman
8 GARY PIERCE
9 BRENDA BURNS
BOB BURNS
10 SUSAN BITTER SMITH

11 IN THE MATTER OF ARIZONA PUBLIC
12 SERVICE COMPANY REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND GPS-3.

Docket No. E-01345A-10-0394

13 IN THE MATTER OF THE APPLICATION OF
14 ARIZONA PUBLIC SERVICE COMPANY FOR
15 APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION FOR
16 RESET OF RENEWABLE ENERGY ADJUSTOR.

Docket No. E-01345A-12-0290

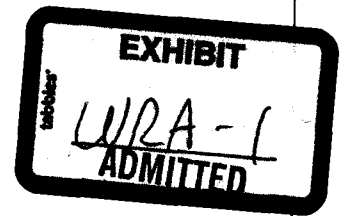
17 IN THE MATTER OF THE APPLICATION OF
18 TUCSON ELECTRIC POWER COMPANY FOR
19 APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION PLAN
20 AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST FOR
RESET OF RENEWABLE ENERGY ADJUSTOR.

Docket No. E-01933A-12-0296

21 IN THE MATTER OF THE APPLICATION OF
22 UNS ELECTRIC, INC. FOR APPROVAL OF ITS
23 2013 RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND DISTRIBUTED
24 ENERGY ADMINISTRATIVE PLAN AND
25 REQUEST FOR RESET OF RENEWABLE
ENERGY ADJUSTOR.

Docket No. E-04204A-12-0297

**NOTICE OF FILING DIRECT
TESTIMONY OF DAVID BERRY ON
BEHALF OF WESTERN RESOURCE
ADVOCATES**



1 Western Resource Advocates ("WRA"), through its undersigned counsel, hereby
2 provides notice that it has this day filed the direct testimony of David Berry in this matter.
3

4 DATED this 24th day of April, 2013

5 ARIZONA CENTER FOR LAW IN
6 THE PUBLIC INTEREST

7 By _____
8 Timothy M. Hogan
9 202 E. McDowell Rd., Suite 153
10 Phoenix, Arizona 85004
11 Attorneys for Western Resource Advocates

12 ORIGINAL and 13 COPIES of
13 the foregoing filed this 24th day
14 of April, 2013, with:

15 Docketing Supervisor
16 Docket Control
17 Arizona Corporation Commission
18 1200 W. Washington
19 Phoenix, AZ 85007

20 COPIES of the foregoing
21 Electronically mailed this
22 24th day of April, 2013, to:

23 All Parties of Record
24
25

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP, *Chairman*
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

IN THE MATTER OF ARIZONA PUBLIC SERVICE
COMPANY REQUEST FOR APPROVAL OF
UPDATED GREEN POWER RATE SCHEDULE
GPS-1, GPS-2, AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION FOR RESET
OF RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC., FOR APPROVAL OF ITS
2013 RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND DISTRIBUTED
ENERGY ADMINISTRATIVE PLAN AND
REQUEST FOR RESET OF ITS RENEWABLE
ENERGY ADJUSTOR.

DOCKET NO. E-04204A-12-0297

Direct Testimony of
David Berry
Western Resource Advocates
April 24, 2013

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Direct Testimony of David Berry

Docket Nos. E-01345A-10-0394, E-01345A-12-0290, E-01933A-12-0296,
and E-04204A-12-0297

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1 Introduction

2
3 Q. Please state your name and business address.

4
5 A. My name is David Berry. My business address is P.O. Box 1064, Scottsdale, Arizona 85252-
6 1064.

7
8 Q. By whom are you employed and in what capacity?

9
10 A. I am Chief of Policy Analysis for Western Resource Advocates (WRA).

11
12 Q. Please describe Western Resource Advocates.

13
14 A. Founded in 1989, Western Resource Advocates is a non-profit environmental law and policy
15 organization dedicated to restoring and protecting the natural environment of the Interior
16 American West. We have developed strategic programs in three areas: water, energy, and
17 lands. We meet our goals in collaboration with other environmental and community groups
18 and by developing solutions that are appropriate to the environmental, economic and
19 cultural framework of the region. Western Resource Advocates has been involved in
20 Arizona utility regulatory issues for over 20 years.

21
22 Q. What are your professional qualifications for presenting testimony in this docket?

23
24 A. Exhibit DB-1 summarizes my qualifications.

25
26 Q. What is the purpose of your testimony?

27
28 A. My testimony addresses: a) the Track and Record proposal for complying with the
29 distributed renewable energy requirement when incentives are no longer provided for
30 distributed renewable energy, and b) alternatives to the Track and Record method,
31 including those proposed by Arizona Public Service Company (APS), Tucson Electric Power
32 Company (TEP), and UNS Electric, Inc. (UNS) on distributed renewable energy.

33
34 Background on Distributed Renewable Energy

35
36 Q. How does the Renewable Energy Standard define distributed renewable energy resources?

37
38 A. Distributed renewable energy resources are applications of eligible technologies, such as
39 photovoltaics (PV) and solar hot water, located at a customer's premises that displace
40 conventional energy resources that would otherwise be used to provide electricity to
41 Arizona customers (A.A.C. R14-2-1802B).

42
43 Q. What advantages do distributed renewable energy resources bring to Arizona?

1 A. Distributed renewable energy resources:

- 2
- 3 • Give Arizona customers more control over their energy resources and enable them
 - 4 to hedge against utility rate increases as they supply some of their electrical needs
 - 5 from resources that have stable prices.
 - 6 • Introduce a modest amount of competition into the retail electricity market.
 - 7 • Enable customers to reduce air emissions associated with the electricity they use
 - 8 because renewable resources displace power generated with fossil fuels.
 - 9 • Benefit Arizona by reducing air emissions from power production.
 - 10 • Benefit all utility customers by enabling the utility to reduce energy costs associated
 - 11 with its most expensive power plants and to defer some capital costs attributable to
 - 12 new generation, transmission, and distribution facilities.
 - 13 • Support Arizona businesses who design and install distributed renewable energy
 - 14 facilities and support local suppliers of those businesses.¹
 - 15

16 Q. How does the distributed renewable energy requirement function in the marketplace?

17

18 A. The distributed requirement creates three types of changes. First, it encourages market

19 entry by suppliers of distributed renewable energy facilities and encourages early adoption

20 of distributed renewable energy technologies by customers until the time that deployment

21 of distributed renewable energy resources becomes routine.

22

23 Second, it has created a degree of market certainty for entrepreneurs. Without that market

24 certainty, the distributed renewable energy industry would be much riskier and many

25 entrepreneurs might direct their efforts elsewhere.

26

27 And third, the distributed renewable energy carve-out also encourages technological

28 improvements, innovative delivery mechanisms, and organizational improvements. These

29 advances include: economies of scale in installation, standardized system design, leasing of

30 photovoltaic systems that allows customers to avoid paying the capital costs of those

31 systems up-front, and combining distributed renewable energy with energy efficiency.

32

33 Q. How is the role of distributed renewable energy evolving?

34

35 A. Distributed renewable energy has features of a disruptive technology.² At first, disruptive

36 technologies lack some of the characteristics of mainstream technologies and thus are not

¹ The *National Solar Jobs Census 2012* prepared by The Solar Foundation, Cornell University, and bw Research Partnership estimates that in 2012 the number of Arizona establishments in the solar industry was as follows: 123 installation establishments, 62 manufacturing establishments, 26 sales and distribution establishments, 15 project development establishments (that plan, construct, or maintain large utility-scale projects), and 41 other establishments. <http://www.thesolarfoundation.org/research/national-solar-jobs-census-2012>.

² See Joseph Bower and Clayton Christensen, "Disruptive Technologies: Catching the Wave," *Harvard Business Review*, January-February 1995, 43-53. Stuart Hart and Clayton Christensen, "The Great Leap: Driving Innovation from the Base of the Pyramid," *MIT Sloan Management Review*, Fall 2002, 51-56.

1 attractive to many customers. However, these technologies have some attributes that are
2 attractive to a niche market of customers. The new technology improves over time, allows
3 more customers to do things for themselves, and becomes competitive with the old
4 mainstream, often displacing the older technology, at least in part, or expanding the
5 market. With regard to distributed PV, many consumers do not know who to trust
6 concerning price and performance or how to navigate bureaucracies for permits. Further,
7 today's PV systems do not serve all of a customer's load and are relatively costly. But they
8 offer stable prices for the energy they provide, have no air emissions, and give customers
9 more control over their energy resources, attributes that some customers value. Prices
10 have fallen dramatically,³ leasing arrangements have overcome the barrier of high up-front
11 costs, and on-site energy storage may become feasible. As more customers adopt
12 distributed PV, the traditional utility and regulatory business model will likely evolve.⁴
13

14 Q. To what extent have APS and TEP customers adopted distributed renewable energy?

15
16 A. In 2012, annualized distributed renewable energy produced in APS's and TEP's service areas
17 combined comprised about 1.75% of retail sales.⁵
18

19 Q. Given the experience with the distributed renewable energy requirements in the market
20 that you have described, should regulatory compliance be concerned only with adherence
21 to the percentage requirements contained in A.A.C. R14-2-1805?
22

23 A. No. Accelerating market entry, innovation, technological change, development of new
24 forms of marketing and organization, and early adoption is a process. Consequently, the
25 distributed requirement should not be thought of as simply checking off annual goals.
26 Further, the renewable energy requirement is not a cap on the rate of deployment of
27 distributed resources (see Decision No. 69127, Appendix B, pp. 23-24).
28

29 It is critical to avoid a sustained downward trajectory of the rate of installations that would:
30 reduce the amount of competition both within the distributed market and between
31 distributed and central station generation; dampen motivations to innovate in the
32 installation and marketing of distributed generation; forego reductions in air emissions;
33 constrain consumers' ability to control their energy use; and relinquish Arizona's leadership
34 in distributed generation. Arizona's policy should be to encourage innovators,
35 entrepreneurs, and early adopters of beneficial new technologies, especially given the great
36 solar resource available in the state.

³ Galen Barbose, Naïm Dargouth, and Ryan Wiser, *Tracking the Sun V: A Historical Summary of the Installed Price of Photovoltaics in the United States from 1998 to 2011*, Lawrence Berkeley National Laboratory, November 2012. Solar Energy Industries Association, *U.S. Solar Market Insight Report, 2012 Year in Review, Executive Summary*.

⁴ Peter Kind, *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*, Edison Electric Institute, January 2013.

⁵ Data are from utility 2012 Renewable Energy Standard compliance reports. In its report, TEP counts reserved projects that are not yet installed.

1 The Role of Renewable Energy Credits (RECs) and Compliance with Distributed
2 Renewable Energy Requirements
3

4 Q. How do utilities demonstrate compliance with the distributed energy portion of the
5 Renewable Energy Standard and Tariff?
6

7 A. Utilities must demonstrate compliance by obtaining renewable energy credits (RECs) from
8 distributed renewable energy resources (A.A.C. R14-2-1805A). A REC is a certificate that
9 indicates that one kWh of electricity (or its equivalent) was produced by an eligible
10 renewable energy technology (A.A.C. R14-2-1803A).
11

12 RECs are owned by the owner of the eligible renewable energy resource from which they
13 were derived unless specifically transferred (A.A.C. R14-2-1803C). Thus, utilities must
14 obtain RECs from owners of distributed renewable energy resources or from other parties
15 who acquired the RECs from distributed renewable energy resources.
16

17 Q. How have Arizona utilities obtained RECs from distributed renewable energy projects?
18

19 A. They purchase the RECs from the owners of eligible projects using a credit purchase
20 agreement. The payment represents an incentive for installing the project.⁶
21

22 Q. Is there a market in RECs?
23

24 A. Yes. RECs can, in general, be transferred to buyers who would use them to meet their
25 renewable energy goals. There are "voluntary" REC markets and "compliance" REC
26 markets. A buyer might be a business seeking to meet voluntary clean energy goals,⁷ or a
27 power generator or utility that must comply with a regulatory standard requiring it to
28 obtain a specified amount of energy from renewable resources.
29

30 Q. How are prices for RECs determined?
31

32 A. In general, the price of a REC is the difference between the cost of electricity generated
33 with renewable energy and the cost of conventionally generated electricity. The price
34 depends on the technology which the buyer seeks (e.g., wind or solar or undifferentiated
35 renewable energy) and the geographic scope of the market (e.g., within a specific state or
36 within a larger area). In early 2012, prices in the voluntary market for wind RECs and
37 undifferentiated renewable energy RECs averaged around \$1 per MWh. RECs associated

⁶ For leased systems, the agreement is with the lessor of the system.

⁷ For examples of large corporations acquiring RECs, purchasing renewable energy, or installing renewable energy facilities on their property, see David Gardiner and Associates, LLC, *Power Forward: Why the World's Largest Companies are Investing in Renewable Energy*, Washington, DC, 2012. See also Environmental Protection Agency, Green Power Partnership, National Top 50 as of January 9, 2013, <http://www.epa.gov/greenpower/toplists/top50.htm>.

with western wind energy in voluntary markets averaged between \$1 and \$2 per MWh.⁸ Compliance market REC prices exhibited a much larger range --from a few dollars per MWh to \$60 per MWh in early 2012.⁹ The range in compliance markets is large because some compliance requirements are restricted to specific technologies which are relatively expensive, such as photovoltaics, and restricted to projects located only in certain states.

Q. Do some customers desire to retain their RECs and not transfer them to another party?

A. Yes. Some customers may wish to retain the RECs from projects located on their property or from other sources to demonstrate compliance with their own clean energy goals. For federal agencies to meet their clean energy requirements, "agencies are required to retain ownership of the RECs from projects in order to count them towards the EPACT 2005 or [Executive Order] 13423 Requirements... That portion of renewable energy/RECs that is used by another party (including electric service providers who claim ownership of renewable energy attributes to meet renewable portfolio standards), or transferred or sold by the Federal agency to a third party, cannot be counted toward the EPACT 2005 or EO13423 Requirement."¹⁰ A private sector example is Wal-Mart which uses power generated at solar energy facilities at some of its stores and retains the RECs.¹¹

Q. Are APS and TEP in compliance with the distributed renewable energy requirements?

A. Yes, and they exceeded the 2012 requirements. Assuming the retail sales forecasts in APS's and TEP's resource planning analyses filed in 2012 and assuming that the utilities acquired no more distributed RECs, the approximate dates when the utilities would fall short of the current distributed renewable energy requirements are shown in the table below.

| Utility and Sector | Approximate Year When Additional RECs Would Be Needed |
|---------------------|-------------------------------------------------------|
| APS: residential | 2016 |
| APS: nonresidential | after 2019 |
| TEP: residential | 2014 |
| TEP: nonresidential | 2020 |

⁸ Jenny Heeter, Philip Armstrong, and Lori Bird, *Market Brief: Status of the Voluntary Renewable Energy Certificate Market (2011 Data)*. Golden, CO: National Renewable Energy Laboratory, NREL/TP-6A20-56128, 2012, Figure 15.

⁹ Heeter, et al., Figure 16.

¹⁰ U.S. Department of Energy, Energy Efficiency and Renewable Energy, *Renewable Energy Requirement Guidance for EPACT 2005 and Executive Order 13423*, January 28, 2008, pp. 8,11,

http://www1.eere.energy.gov/femp/pdfs/epact05_fedrenewenergyguid.pdf. On this matter, see the letter from Cynthia Cordova, U.S. Department of Veterans Affairs, filed in Docket No. E-01345A-10-0394 on November 27, 2012 and the letter from C.L. Stathos, Department of Defense, filed in Docket No. E-01933A-12-0296 on January 22, 2013.

¹¹ "Wal-Mart Announces Solar Power Pilot Project," May 7, 2007, <http://news.walmart.com/news-archive/2007/05/07/wal-mart-announces-solar-power-pilot-project>.

1 The Track and Record Approach

2
3 Q. APS and Staff previously proposed a track and record method to address compliance with
4 the Renewable Energy Standard when incentives are no longer available. What is your
5 assessment of a track and record method as originally proposed by APS and Staff?

6
7 A. Under the original track and record proposal, a utility would not purchase RECs because
8 there would be no cash incentive for distributed projects. However, the utility would count
9 the RECs associated with new distributed energy projects and report the volume of RECs to
10 the Commission to demonstrate compliance with the Renewable Energy Standard. The
11 track and record method originally proposed by APS and Staff is flawed because it implicitly
12 counts RECs to meet the distributed energy requirements. Thus, double counting of RECs
13 would occur if the owner of the distributed energy project tried to sell the RECs to a third
14 party or use the RECs to meet its own renewable energy goals. Further, the owner of the
15 distributed project would not be compensated for the RECs by the utility.

16
17 Q. Are there organizations that prescribe "ground rules" for counting RECs?

18
19 A. Yes. The Center for Resource Solutions has established the Green-e Energy National
20 Standard for Renewable Electricity Products. The standard is intended to protect
21 consumers in renewable energy markets by mandating accountability on retail products
22 sold to consumers.

23
24 Q. Is double counting of RECs permitted under the Green-e Energy National Standard for
25 Renewable Electricity Products?

26
27 A. No. "Eligible RECs or renewable energy can be used once and only once ... Renewable
28 energy or RECs (or the renewable or environmental attributes incorporated in that REC)
29 that can be legitimately claimed by another party may NOT be used in Green-e Energy
30 Certified REC products."¹²

31
32 Q. In light of the double-counting problem, can the track and record proposal impose a burden
33 on customers with distributed solar energy projects?

34
35 A. Yes. First, customers would forego the market value of their RECs. In addition, customers
36 who want to retain their RECs to demonstrate compliance with their own goals will not be
37 able to count RECs from systems located on their own property due to the double-counting
38 problem. This creates a disincentive to installing distributed renewable energy systems --
39 the track and record method would essentially disallow counting the RECs toward meeting a
40 customer's clean energy goal. So an Arizona customer may refrain from investing in
41 renewable energy or leasing photovoltaic facilities.

¹² Center for Resource Solutions, *Green-e Energy, National Standard Version 2.1*, p. 8. More detail can be found on pages 9 and 22.

1
2 Q. Do utilities require RECs that they obtain to meet the Renewable Energy Standard not be
3 double-counted?

4
5 A. Yes. Double counting is not permitted under the terms of their credit purchase agreements.
6

7 Q. Should the Commission adopt a track and record method as originally proposed?
8

9 A. No, because of the burdens imposed on customers. APS, TEP, and UNS have not proposed
10 the original track and record method in their direct testimony, but are proposing a different
11 approach as described in the next section.
12

13 Assessment of Utility Proposals Regarding Distributed Renewable Energy
14

15 Q. What is APS's proposal regarding distributed renewable energy and RECs when direct cash
16 incentives come to an end?
17

18 A. Mr. Bernosky proposes that the Commission waive the distributed renewable energy
19 requirement temporarily (pp. 6-7) until the Renewable Energy Standard rule can be
20 modified to eliminate the distributed energy requirement (p. 6). The overall renewable
21 energy target for each year now in the rule (R14-2-1804) would remain in place (p. 7). APS
22 would report the amount of distributed renewable energy produced for informational
23 purposes (p. 6) and customers would retain their RECs (pp. 7, 8). APS could acquire new
24 distributed energy RECs to meet its overall renewable energy requirement (p. 6). By
25 eliminating the distributed energy requirement, the utility does not have to obtain
26 distributed RECs to meet the distributed component of the Standard and the double
27 counting problem presumably goes away.
28

29 Q. Is the TEP/UNS proposal similar to APS's proposal?
30

31 A. It is very similar.¹³
32

33 Q. What is your assessment of the utilities' proposal?
34

35 A. It is premature. The effects of potential changes in the net metering rule and of recent and
36 pending rate design changes have to be considered before eliminating the distributed
37 renewable energy standard requirements.

¹³ TEP (p. 8) proposes two alternatives to a waiver of the distributed requirement – a) requiring a customer to transfer RECs to a utility in exchange for net metering, and b) a track and reduce mechanism in which the utility would report kWh sales served from customers' renewable energy systems but no REC transfer would occur and the total annual renewable energy requirement would be reduced by a commensurate amount. Requiring a customer to transfer RECs in exchange for net metering could be unfair to the customer, and the track and reduce proposal implicitly double counts RECs. These alternatives should be rejected.

1 Recommendations

2
3 Q. Should the utilities be allowed, in the absence of payment of incentives, to use a track and
4 record method of complying with the distributed energy requirement?

5
6 A. Utilities should not be allowed to use the track and record method initially proposed by APS
7 and Staff in 2012.

8
9 Q. Should the Commission commence a rule-making proceeding to consider eliminating the
10 distributed energy requirement as proposed by the utilities?

11
12 A. No, not at this time. The utilities have assumed that incentives would no longer be needed
13 to encourage market entry, early adoption, and innovation, but changes in the net metering
14 rule and rate design changes may undermine that assumption.

15
16 Q. How should the Commission proceed?

17
18 A. WRA proposes two alternatives:

- 19 a. Use an auction process to obtain RECs from distributed renewable energy projects
20 to comply with the current distributed renewable energy requirement, or
21 b. Prior to consideration of the utilities' proposal to eliminate the distributed energy
22 requirement, conduct a technical conference to obtain reliable information on the
23 effect on the rate of adoption of distributed renewable energy of: i) eliminating
24 incentives, ii) changing net metering practices that may result from APS's on-going
25 technical conferences concerning the costs and benefits of distributed renewable
26 energy resources (Decision No. 73636, Findings of Fact Nos. 41 and 42), and iii)
27 recent and pending rate design changes.

28
29 Q. How would the Commission establish an auction process for RECs?

30
31 A. The Commission should direct utilities to offer to purchase RECs from willing sellers. The
32 specifics of an auction or similar approach, including the terms of REC purchases, should be
33 developed through a collaborative process among Staff, utilities, and stakeholders so that
34 the auction is workable, fair, effective, and consistent with the Renewable Energy Standard.
35 A salient starting point for designing an auction method would be APS's experience with
36 performance based incentives.¹⁴ The collaborative effort should be led by Staff. An
37 important component of a workable auction or other method is that transaction costs for
38 buyers and sellers of RECs be as low as practical; otherwise the hassle of selling RECs will
39 constrain participation in the auction. Consistent with A.A.C. R14-2-1805A, R14-2-1801E,
40 and R14-2-1802B, the RECs should be derived from distributed renewable energy resources

¹⁴ Information and guidance may also be obtained from experience with auction processes developed in other states, such as the Delaware Solar REC procurement program, <http://www.srecdelaware.com/>, and from commercial exchanges that auction RECs, e.g., <http://www.flettexchange.com/index.php?page=public>.

1 using eligible renewable energy technologies located at a utility's customer's premises.
2 Ideally, the first auction would not occur until the Commission has completed its review of
3 changes in the net metering rule so that all parties have up-to-date information about the
4 level of incentives that might be needed. The utilities, Staff, and stakeholders should
5 provide the Commission with their recommendations within six months of the effective
6 date of the decision in this matter.

7
8 A well-designed auction process will reveal the level of incentives needed to attract
9 investment in distributed resources, including situations in which the net metering rule is
10 modified (or expected to be modified) and rate design changes are adopted. If incentives
11 are no longer needed, the market price for RECs should be very low in all Arizona market
12 segments (PV, solar hot water, other technologies, and residential, commercial,
13 government, and school sectors).

14
15 Q. What would be the cost to the utilities if they acquire RECs through an auction process?

16
17 A. The cost depends on the volume of RECs acquired and the market price of RECs. If, for
18 example, utilities obtained RECs from 150 MW of new distributed energy facilities in a given
19 year and the market price were \$1 per MWh, the present value of the cost over a 20 year
20 time horizon at a 6% discount rate would be about \$2.9 million.

21
22 Q. If the auction method is adopted, how much distributed renewable energy should be
23 sought?

24
25 A. Specific quantities should be proposed in the utilities' implementation plans, consistent
26 with the functions of the distributed renewable energy requirement described on page 2.

27
28 Q. What is the scope of the technical conference option?

29
30 A. The technical conference should be led by Staff. Evidence should be provided on the effect
31 of changes in incentives (including elimination of incentives) and the effect of changes in
32 distributed energy costs on the adoption rate over time of various renewable energy
33 technologies by residential, commercial, school, and government customers. In addition,
34 the technical conference should address the effects of other regulatory changes and rate
35 design changes on the adoption rates of distributed renewable energy technologies. That
36 is, the combined effect of reducing incentives or eliminating the distributed renewable
37 energy requirement and other Commission actions, like changes to the net metering rules
38 and impacts of recent rate design changes, must be considered. Otherwise the advantages
39 of distributed renewable energy could be seriously jeopardized by separate decisions that,
40 when taken together, discourage distributed renewable energy, thwart customer choice,
41 inhibit innovation, and restrain market entry and competition.

42
43 If the evidence does not conclusively indicate that incentives are no longer needed, taking
44 into account changes or potential changes in net metering practices and recent or pending

1 changes in rate design, the utilities' proposal to eliminate the distributed renewable energy
2 requirement would be modified,¹⁵ postponed, or rejected.

3
4 Q. What is your recommendation on the utilities' request for a waiver?

5
6 A. A waiver would temporarily suspend the distributed renewable energy requirement and
7 would be appropriate for either the auction option or the technical conference option.¹⁶
8 The waiver should be short-term, lasting until an auction is established or until the
9 Commission concludes the technical conference and any follow-up actions, but not more
10 than one year. The waiver would apply only to portions of R14-2-1805 (the Distributed
11 Renewable Energy Requirement) and not to any other section of the Renewable Energy
12 Standard. Thus, the utilities would not be relieved of meeting the requirements of R14-2-
13 1804.¹⁷

14
15 Q. What happens to the RECs associated with projects installed during the waiver period?

16
17 A. The RECs stay with the owners of the distributed renewable energy facilities. They would
18 not be transferred to a utility unless the owner of the renewable energy facility expressly
19 agrees to do so and is properly compensated for the RECs.

20
21 Q. Please summarize your recommendations.

22
23 A. The track and record method as originally proposed by APS and Staff should be rejected.
24 The utilities' proposal to eliminate the distributed renewable energy requirement is
25 premature because it is necessary to account for the effects of potential changes to the net
26 metering rule and the effects of recent and pending rate design changes on the decisions of
27 customers contemplating distributed renewable energy. WRA proposes two alternatives:
28 a) develop and implement an auction process to acquire RECs to comply with the
29 distributed renewable energy requirement, or b) through a technical conference, obtain
30 more information about the need for incentives for distributed renewable energy, taking
31 into account changes in net metering practices and rate design changes before considering
32 whether to eliminate the distributed renewable energy requirement. The Commission
33 should temporarily waive the distributed energy requirement while the auction process is
34 set up or the technical conference and any follow-up actions are completed.

35
36 Q. Does this conclude your direct testimony?

37
38 A. Yes.

¹⁵ For example, it may that incentives would be needed only for nonresidential projects.

¹⁶ A waiver based on or contingent on production of distributed renewable energy may lead to a double counting problem.

¹⁷ Utilities could purchase RECs from distributed renewable resources to help meet the overall renewable energy requirements.

Exhibit DB-1: Qualifications of David Berry

Experience

Western Resource Advocates (Scottsdale, AZ), Chief of Policy Analysis and Senior Policy Advisor (2001 – present).
Navigant Consulting, Inc. (Phoenix, AZ), Senior Engagement Manager (1997-2001).
Arizona Corporation Commission (Phoenix, AZ), Chief Economist and Chief, Economics and Research (1985 – 1996).
Boston University Department of Urban Affairs and Planning, Lecturer (1981-1985).
Abt Associates, Inc. (Cambridge, MA), Senior Analyst (1979-1985).
University of Illinois Department of Urban and Regional Planning, Visiting Assistant Professor (1977-1979).
University of Pennsylvania Regional Science Department, Lecturer (1974 –1977).
Regional Science Research Institute (Philadelphia, PA), Research Associate (1972-1977).
U.S. Army (1969-1971).

Education

Ph.D. Regional Science, University of Pennsylvania
MA Regional Science, University of Pennsylvania
BA Geography, Syracuse University

Referee for Peer-Reviewed Publications

International Regional Science Review, Annals of the Association of American Geographers, Ecological Economics, Energy Policy, Energy Economics, University of Pennsylvania Press.

Testimony and Public Comment Before:

Maine Land Use Regulation Commission, Arizona Corporation Commission, New Mexico Public Regulation Commission, Public Utilities Commission of Nevada.

Selected Publications

"Community Clean Energy Programs: Proficiencies and Practices," *Environmental Practice* (forthcoming).
"Sustainable Energy Alternatives for the Southwest," in Richard Malloy, John Brock, Anthony Floyd, Margaret Livingston, and Robert Webb, eds., *Design with the Desert: Conservation and Sustainable Development*, Boca Raton, FL, CRC Press: 505-520 (2013).
Descending from the Pollution Plateau: Why Carbon Dioxide Emissions are Declining in the Mountain West and How to Keep it that Way, Western Resource Advocates, 2012.
Solar Solutions: Incorporating Photovoltaics into Public Infrastructure, Western Resource Advocates, 2011.
"Delivering Energy Savings through Community-Based Organizations," *The Electricity Journal*, vol. 23 (November 2010): 65-74.
Phoenix Green: Designing a Community Tree Planting Program for Phoenix, Arizona, Western Resource Advocates, 2009.
"Innovation and the Price of Wind Energy in the US," *Energy Policy*, vol. 37 (November 2009): 4493-4499.

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6 **BEFORE THE ARIZONA CORPORATION COMMISSION**

7 BOB STUMP, Chairman
8 GARY PIERCE
9 BRENDA BURNS
10 BOB BURNS
11 SUSAN BITTER SMITH

12 IN THE MATTER OF ARIZONA PUBLIC
13 SERVICE COMPANY REQUEST FOR
14 APPROVAL OF UPDATED GREEN POWER
15 RATE SCHEDULE GPS-1, GPS-2, AND GPS-3.

Docket No. E-01345A-10-0394

16 IN THE MATTER OF THE APPLICATION OF
17 ARIZONA PUBLIC SERVICE COMPANY FOR
18 APPROVAL OF ITS 2013 RENEWABLE
19 ENERGY STANDARD IMPLEMENTATION FOR
20 RESET OF RENEWABLE ENERGY ADJUSTOR.

Docket No. E-01345A-12-0290

21 IN THE MATTER OF THE APPLICATION OF
22 TUCSON ELECTRIC POWER COMPANY FOR
23 APPROVAL OF ITS 2013 RENEWABLE
24 ENERGY STANDARD IMPLEMENTATION PLAN
25 AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST FOR
RESET OF RENEWABLE ENERGY ADJUSTOR.

Docket No. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF ITS
2013 RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND DISTRIBUTED
ENERGY ADMINISTRATIVE PLAN AND
REQUEST FOR RESET OF RENEWABLE
ENERGY ADJUSTOR.

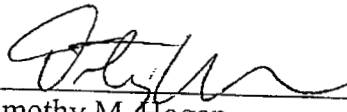
Docket No. E-04204A-12-0297

**NOTICE OF FILING REBUTTAL
TESTIMONY OF DAVID BERRY ON
BEHALF OF WESTERN RESOURCE
ADVOCATES**

1
2 Western Resource Advocates ("WRA"), through its undersigned counsel, hereby
3 provides notice that it has this day filed the rebuttal testimony of David Berry in this matter.

4 DATED this 8th day of May, 2013

5 ARIZONA CENTER FOR LAW IN
6 THE PUBLIC INTEREST

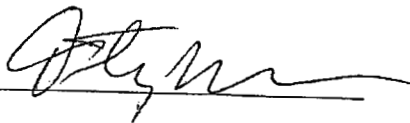
7
8 By 
9 Timothy M. Hogan
10 202 E. McDowell Rd., Suite 153
11 Phoenix, Arizona 85004
12 Attorneys for Western Resource Advocates

13 ORIGINAL and 13 COPIES of
14 the foregoing filed this 8th day
15 of May, 2013, with:

16 Docketing Supervisor
17 Docket Control
18 Arizona Corporation Commission
19 1200 W. Washington
20 Phoenix, AZ 85007

21 COPIES of the foregoing
22 Electronically mailed this
23 8th day of May, 2013, to:

24 All Parties of Record
25



BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP, *Chairman*
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

IN THE MATTER OF ARIZONA PUBLIC SERVICE
COMPANY REQUEST FOR APPROVAL OF
UPDATED GREEN POWER RATE SCHEDULE
GPS-1,GPS-2, AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
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STANDARD IMPLEMENTATION FOR RESET
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DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
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DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
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DOCKET NO. E-04204A-12-0297

Rebuttal Testimony of
David Berry
Western Resource Advocates
May 8, 2013

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and E-04204A-12-0297

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| Devaluation of RECs Inherent in Staff's and RUCO's Proposals | 2 |
| Conclusions | 3 |

1 Introduction

2
3 Q. Please state your name.

4
5 A. My name is David Berry.

6
7 Q. Did you previously file direct testimony in this matter?

8
9 A. Yes, on behalf of Western Resource Advocates (WRA).

10
11 Q. What is the purpose of your rebuttal testimony?

12
13 A. I address the lack of support for the utilities' proposal to eliminate the distributed
14 renewable energy requirement from the Renewable Energy Standard, and the devaluation
15 of renewable energy credits (RECs) inherent in Staff's proposal and RUCO's initial position.
16

17 Lack of Support for Eliminating the Distributed Renewable Energy Requirement

18
19 Q. Did any of the other parties filing testimony on April 24, 2013 support the utilities' proposal
20 to eliminate the distributed renewable energy requirement (A.A.C. R14-2-1805) of the
21 Renewable Energy Standard?
22

23 A. No. Wal-Mart "would oppose any attempt to permanently eliminate any portion of the DE
24 carve-out" (p. 8, line 20-21). The Department of Veterans Affairs suggests that utilities
25 "purchase the RECs needed to comply with the [distributed renewable energy
26 requirement]. This will ensure appropriate compensation to the current REC owner and
27 uphold the integrity of the REC system, while appropriately incentivizing further investment
28 in renewable energy generation in the Affected Utilities' service territories" (p. 3, lines 14-
29 18). The Army states that the utilities' proposals, including removal of the distributed
30 energy carve-out, "would likely negatively affect the value of RECs and viability of
31 renewable energy projects in Arizona. This would then negatively impact the economic
32 valuation of renewable energy projects by EITF" (p. 9, lines 4-6). NRG states that "the
33 Commission should reject the utilities' proposal to issue a temporary waiver from the DE
34 requirement and then make a permanent change to the RES Rules by eliminating the DE
35 requirement altogether" (p. 3, lines 5-7).
36

37 Several parties also indicated a need for more information. SEIA stated that it "does not
38 recommend that the DE carve-out requirement be eliminated" (p. 11, lines 1-2). SEIA
39 further points out that more information is needed, including consideration of the impacts
40 of changes to the Commission's net metering policy, before the Commission can develop a
41 long term policy (p. 11 line 20 through p. 12 line 24). Vote Solar recommends that "the
42 Commission not reopen the REST rules at this time, but rather use the time during which
43 incentives for residential solar are still available to investigate the lowest cost options
44 through which utilities could acquire RECs. This will also provide the time necessary for

1 other policies such as net metering to be more thoroughly reviewed in the context of
2 Arizona utilities. This will allow the Commission to make a more reasoned decision based
3 on more information on the economics of residential solar..." (p. 17; starting on line 19).

4
5 Finally, Staff does not support the utilities' proposal to eliminate the DE set-aside (Robert
6 Gray, p. 4, line 20 to page 5, line 20). RUCO has not finalized its position.

7
8 Devaluation of RECs Inherent in Staff's and RUCO's Proposals

9
10 Q. Please summarize Staff's proposal.

11
12 A. Mr. Gray proposes a "Track and Monitor" method (p. 7, lines 2-6). Under this method the
13 Renewable Energy Standard requirement would be reduced for each utility on a kWh per
14 kWh basis for all distributed energy that is produced in their service territory where no REC
15 transfer to the utility takes place. Mr. Gray provides numerical examples in Exhibit RGG-2.

16
17 Mr. Gray explains (p. 11, lines 9-14) that all customers' distributed energy production would
18 be metered and they would either fall into: (1) the category where the utility receives the
19 RECs, or (2) the category of production facilities where no incentive is taken and no RECs
20 are transferred to the utility. Production from category 1 would count toward meeting the
21 utility's Renewable Energy Standard compliance requirement, and production from
22 category 2 would reduce the utility's Renewable Energy Standard requirement.

23
24 Mr. Gray further explains (p. 10, lines 15-22) that the Commission should grant a waiver to
25 implement the Track and Monitor approach. If the Track and Monitor approach works, the
26 Commission could consider amending the Renewable Energy Standard rule to incorporate
27 the Track and Monitor method. Mr. Gray indicates that if the Track and Monitor approach
28 were approved by the Commission in this proceeding and implemented in the utilities' 2014
29 Renewable Energy Standard plans, the utilities could report on their experience with the
30 Track and Record method in their 2015 implementation plans.

31
32 Q. Does Staff's proposal conflict with standards set to ensure accountability on RECs sold to
33 retail consumers?

34
35 A. Unfortunately, it does, by creating a double counting predicament for REC owners.
36 According to the Green-e Energy National Standard for Renewable Electricity Products,
37 "Eligible RECs or renewable energy can be used once and only once ... Renewable energy or
38 RECs (or the renewable or environmental attributes incorporated in that REC) that can be
39 legitimately claimed by another party may NOT be used in Green-e Energy Certified REC
40 products."¹

41

¹ Center for Resource Solutions, *Green-e Energy, National Standard Version 2.3*, p. 9.

1 Energy (kWh) produced from eligible renewable resources for which the RECs are not
2 transferred to the utility would be used to reduce the renewable energy requirement under
3 the Track and Monitor method. Thus, the RECs associated with these kWh are implicitly
4 counted to adjust the regulatory requirement. Consequently, those RECs cannot also be
5 used by the customer to meet his or her own renewable energy goals nor can they be sold
6 by the customer to another party because the RECs would be double counted. As a result,
7 in the case where the utility counts renewable kWh from distributed resources to adjust the
8 renewable energy requirement without actually obtaining the RECs, Staff's proposal
9 devalues a customer's RECs without compensation to the customer. One REC cannot serve
10 two purposes.

11
12 Q. Does RUCO's initial position conflict with standards set to ensure accountability on RECs
13 sold to retail consumers ?

14
15 A. Although it is only sketched out, RUCO's initial position seems to suffer from the same
16 problem as Staff's proposal. Utilities would be required by regulation to ensure deployment
17 of a specified amount of distributed renewable energy hosted by customers. Meeting this
18 requirement has the effect of counting the RECs to demonstrate compliance with a
19 Commission rule. However, RUCO does not propose compensating the customers for their
20 RECs. The RECs could not be sold by the customers nor used to meet the customer's own
21 clean energy goals because doing so would double count the RECs. The RECs would
22 therefore be devalued.

23
24 Q. Should the Commission adopt Staff's or RUCO's proposals?

25
26 A. No, because these proposals devalue customers' RECs.

27
28 Conclusions

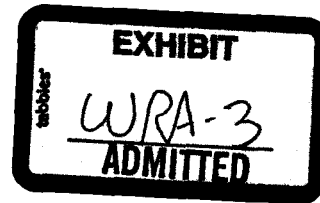
29
30 Q. Please summarize your conclusions.

31
32 A. First, there is no support from Staff and intervenors for eliminating the distributed
33 renewable energy requirement from the Renewable Energy Standard at this time. Second,
34 Staff's proposed Track and Monitor method and RUCO's initial position will render RECs
35 worthless in REC markets and useless in meeting a customer's own clean energy goals,
36 thereby discouraging investment in new distributed renewable energy facilities. Staff's and
37 RUCO's proposals should be rejected.

38
39 Q. Does this conclude your rebuttal testimony?

40
41 A. Yes.

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6 **BEFORE THE ARIZONA CORPORATION COMMISSION**

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9 BRENDA BURNS
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12 IN THE MATTER OF ARIZONA PUBLIC
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Docket No. E-01345A-10-0394

16 IN THE MATTER OF THE APPLICATION OF
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19 ENERGY STANDARD IMPLEMENTATION FOR
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Docket No. E-01345A-12-0290

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24 ENERGY STANDARD IMPLEMENTATION PLAN
25 AND DISTRIBUTED ENERGY
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Docket No. E-01933A-12-0296

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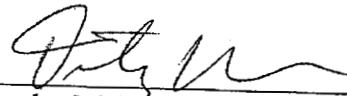
Docket No. E-04204A-12-0297

**NOTICE OF FILING SURREBUTTAL
TESTIMONY OF DAVID BERRY ON
BEHALF OF WESTERN RESOURCE
ADVOCATES**

1
2 Western Resource Advocates ("WRA"), through its undersigned counsel, hereby
3 provides notice that it has this day filed the surrebuttal testimony of David Berry in this matter.

4 DATED this 22nd day of May, 2013

5 ARIZONA CENTER FOR LAW IN
6 THE PUBLIC INTEREST

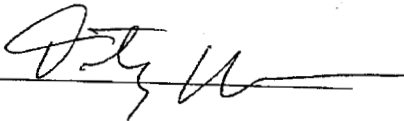
7 By 
8 Timothy M. Hogan
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11 Attorneys for Western Resource Advocates

12 ORIGINAL and 13 COPIES of
13 the foregoing filed this 22nd day
14 of May, 2013, with:

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17 Arizona Corporation Commission
18 1200 W. Washington
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21 Electronically mailed this
22 22nd day of May, 2013, to:

23 All Parties of Record
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25



BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP, *Chairman*
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

IN THE MATTER OF ARIZONA PUBLIC SERVICE
COMPANY REQUEST FOR APPROVAL OF
UPDATED GREEN POWER RATE SCHEDULE
GPS-1, GPS-2, AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
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DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
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DOCKET NO. E-01933A-12-0296

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DOCKET NO. E-04204A-12-0297

Surrebuttal Testimony of
David Berry
Western Resource Advocates
May 22, 2013

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Surrebuttal Testimony of David Berry

Docket Nos. E-01345A-10-0394, E-01345A-12-0290, E-01933A-12-0296,
and E-04204A-12-0297

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| RUCO's Proposed Temporary 50/50 Split of RECs..... | 5 |
| Conclusions | 6 |

1 Introduction

2
3 Q. Please state your name.

4
5 A. My name is David Berry.

6
7 Q. Did you previously file testimony in this matter?

8
9 A. Yes, on behalf of Western Resource Advocates (WRA).

10
11 Q. What is the purpose of your surrebuttal testimony?

12
13 A. I address: a) the central issues in this docket, b) controlling cost exposure when utilities
14 purchase renewable energy credits or certificates (RECs), c) protecting the value of RECs,
15 and d) RUCO's proposed temporary 50/50 split of RECs.

16
17 The Central Issues in This Docket

18
19 Q. What are the central issues facing the Commission in this proceeding?

20
21 A. While there are numerous disagreements among the parties (some of which are discussed
22 below), the central issues before the Commission are:

- 23
24 a) minimizing the utilities' costs of fostering distributed renewable energy,
25 b) encouraging early adoption of distributed renewable energy and innovation in
26 distributed renewable energy markets, thereby introducing a modest amount of
27 competition into the electricity market through distributed renewable energy, and
28 c) protecting the value of RECs from actions which devalue those RECs.

29
30 Currently, direct incentives for distributed renewable energy are at or close to zero **but the**
31 **role of incentives in the future depends on whether and how the Commission modifies**
32 **net metering practices and changes rate designs.** These changes will play out over time
33 and cannot be accurately projected or permanently settled today. **The Commission should**
34 **not box itself in by eliminating the distributed renewable energy requirement at this time**
35 **as proposed by the utilities and should not destroy the value of RECs as proposed by Staff.**

36
37 Q. Staff says that getting more information as proposed by WRA would cause an unnecessary
38 delay in resolving the issue of how to implement the distributed renewable energy
39 requirement when incentives are no longer needed (Staff rebuttal, page 2, starting on line
40 20). Does WRA's proposal cause an unnecessary delay?

41
42 A. No. First of all, Staff's proposed Track and Monitor approach devalues customers' RECs and
43 should not be implemented at all. Second, the utilities' proposal to eliminate the
44 distributed energy requirement is premature. The Commission's consideration of

1 eliminating the distributed energy requirement should take into account decisions on net
2 metering and rate design changes that it has not yet made. Depending on those future
3 changes, retention of the distributed renewable energy requirement and a REC acquisition
4 method may be necessary. A "delay" in accepting the utilities' proposal is, therefore, quite
5 appropriate. A temporary waiver of the distributed energy requirement until net metering
6 issues have been resolved and a REC acquisition method is adopted is also appropriate.
7 During the waiver period, the utilities could report kWh of energy produced by distributed
8 renewable energy projects to the Commission for informational purposes; because there
9 would be no distributed renewable energy requirement in effect, there would be no conflict
10 over ownership of RECs.

11
12 Q. Have other parties expressed similar concerns about a hasty resolution of the role of RECs,
13 the distributed renewable energy requirement, and incentives for distributed renewable
14 energy?

15
16 A. Yes. SEIA's and Vote Solar's direct testimony recognize the multiple factors and processes
17 that affect the development of a just and reasonable resolution. Also, RUCO recognizes the
18 many moving parts that must be considered (RUCO rebuttal, p. 6). RUCO states that
19 "finding a solution in an ever changing market presents a unique challenge" (rebuttal, p. 6,
20 lines 7-8), that it is necessary to "give the process time" (rebuttal, p. 6, line 11), and that
21 "the current system of REC transfer and viability of potential policies solutions ... could be
22 greatly impacted by the end result of the technical conference (on net metering) and
23 subsequent Commission decision" (rebuttal, p. 6, lines 17-20).

24
25 Controlling Costs When Utilities Purchase RECs

26
27 Q. Staff is concerned that using an auction type of approach to obtain RECs would lead to
28 uncertain costs of meeting the requirements of the Renewable Energy Standard because
29 the winning bid prices are uncertain (rebuttal p. 7, starting on line 25). What is the major
30 cause of this uncertainty?

31
32 A. The major cause is uncertainty about future Commission actions regarding net metering
33 practices and rate design changes. Potential changes to net metering practices and to rate
34 designs increase the risk to the customer contemplating an investment in distributed
35 renewable energy. Today, because the cost of distributed solar energy and retail electric
36 rates are about the same for many customers, incentives are not needed in many cases and
37 REC prices in Arizona are therefore likely to be low.¹ However, changes or potential
38 changes in net metering practices or rate designs could very well increase the need for
39 direct incentives to encourage distributed renewable energy, resulting in increased REC
40 prices.
41

¹ In general, the price of a REC is the difference between the cost of electricity generated with renewable energy and the cost of conventionally generated electricity. See my direct testimony, page 4, starting on line 32.

1 Q. Staff is also concerned that the Commission would have no direct control over the level of
2 incentives if an auction process were used (Staff rebuttal, p. 7, lines 13-14; p. 9, lines 9-10).
3 How can the Commission exercise control over the budget?
4

5 A. The Commission could establish an annual budget in its regular review of implementation
6 plans, based upon information provided by stakeholders, upon proposed budgets
7 developed by the utilities, and upon prior years' experience with REC prices. As an
8 alternative to an auction, WRA also proposed a technical conference approach to determine
9 whether incentives would be needed. If incentives are needed, they could be set
10 administratively or via an auction. In either the auction approach or the administrative
11 approach, the Commission could establish an annual budget for incentives in its regular
12 review of implementation plans.
13

14 Q. Could utilities include a "standard offer" bid price in soliciting bids in order to better
15 estimate the budget for an auction process?
16

17 A. Yes.
18

19 Q. Staff indicates that sellers of RECs in an auction process would be able to manipulate the
20 market and force up REC prices (Staff rebuttal, p. 8, lines 16-24). Is this a serious issue?
21

22 A. Not if the utilities adopt a well-designed auction process, based upon their previous
23 experience with bidding processes and experience in other states with auctions. Results of
24 the auctions should be made public, audited by or for Staff, and reviewed by the
25 Commission. Further, Arizona experience demonstrates a strong interest in distributed
26 generation by customers. Thus, market manipulation would require thousands of
27 customers to strategize in a coordinated manner to hold up the utilities. It is more likely
28 that the customers and their contractors would compete with each other to offer as low a
29 bid as they would need to proceed with their projects.² Losing bidders get no incentive.
30

31 Protecting the Value of Renewable Energy Credits (RECs) 32

33 Q. Did Staff address the devaluation of RECs due to double counting inherent in its Track and
34 Monitor proposal in either its direct testimony or rebuttal?
35

36 A. No. The devaluation problem remains a major shortcoming in Staff's recommendations as
37 explained in my rebuttal testimony. Also, for the same reasons as explained in my rebuttal
38 testimony, customers would not be able sell their RECs under a track and monitor approach
39 despite TEP's and UNS's opinion to the contrary (TEP & UNS rebuttal page 3, starting at line
40 13).
41

² To further dilute the market power of REC sellers, utilities could accept bids only from individual project owners and not from REC aggregators.

1 Q. Wal-Mart's rebuttal testimony (page 3, starting at line 10 and page 3, starting at line 17)
2 references WRA's direct testimony and indicates that: a) if a utility were granted a
3 temporary waiver from the distributed energy requirement there would be no obligation
4 for it to comply with, and b) the information provided to the Commission on kWh of energy
5 produced by distributed renewable energy facilities would be for informational purposes
6 and not for satisfying any type of compliance obligation. Wal-Mart concludes that "contrary
7 to the suggestion of some other parties, it appears that kWhs reported to the Commission,
8 but not claimed to be satisfying a utility's RES DE requirement (because that requirement
9 was waived for a given year), or any other portion of the utility's RES requirements, would
10 not result in double counting ..." (p. 5, lines 8-12). Do you agree with Wal-Mart on this
11 point?
12

13 A. Yes. Wal-Mart's interpretation is the same as that in my direct testimony (page 10, lines 6
14 through 19, including footnote 16). There would be no double counting of RECs associated
15 with projects during the waiver period because there is no regulatory requirement
16 pertaining to distributed renewable energy in force.
17

18 Q. Tucson Electric Power Company and UNS Electric, Inc. (TEP & UNS) continue to maintain
19 that any value of RECs to the Affected Utilities is the result of the legal fiction created under
20 the Renewable Energy Standard and that renewable energy credits are a means of tracking
21 compliance (TEP & UNS rebuttal p. 5, lines 13-18). Does TEP & UNS's view constitute a fair
22 and complete understanding of RECs?
23

24 A. No. First, renewable energy comes with environmental and other attributes. Property
25 rights in these attributes are separable from the rights to electric energy (kWh) generated
26 by renewable resources and are traded in REC markets. "Unbundling" of attributes from an
27 underlying good or service is not unique to renewable energy. For instance, development
28 rights can be unbundled from land. Separable development rights underlie such practices
29 as public purchase of development rights to preserve open space, acquisition of
30 development rights by land trusts to preserve open space, and use of transferable
31 development rights to preserve open space.
32

33 Second, RECs associated with Arizona distributed renewable energy projects (and central
34 station renewable energy projects) would exist even if there were not a Renewable Energy
35 Standard in Arizona. Those RECs could be purchased by parties other than Arizona utilities
36 through voluntary or compliance markets or retained by their owners to demonstrate that
37 they are meeting their own clean energy goals.
38

39 Third, A.A.C. R14-2-1803 clarifies the property rights in RECs. Property rights demarcate
40 ownership of tradable credits and enable a clear transfer of control of the credits. Without
41 a clear assignment of rights in tradable credits, the Commission and the utility could not be
42 sure that the portfolio standard was being met. Additionally, without a clear assignment of
43 rights, owners of renewable generation equipment could not be sure of their ability to
44 capture the revenues from the production of eligible energy for which they have incurred

1 the costs. Further, buyers of RECs could not be sure that they aren't being swindled if
2 property rights are not clearly defined and enforceable.

3
4 Thus, RECs are not a fiction. They are real and exist whether or not TEP & UNS track them or
5 acquire them. Further, ambiguous property rights and double counting are real economic
6 problems that are addressed by the Commission's Renewable Energy Standard.

7
8 RUCO's Proposed Temporary 50/50 Split of RECs

9
10 Q. RUCO proposes splitting RECs 50/50 between the system owner and the utility to
11 temporarily resolve the issue of REC transfers and payments in the absence of incentives if
12 the Commission does not act on proposed net metering changes for "some time" (RUCO
13 rebuttal, starting on p. 7, line 19). How does RUCO envision the 50/50 split would work?

14
15 A. RUCO views the system owner/investor and the utility as "partners" – one providing the
16 capital and space to host the system and the other integrating the system into the grid. The
17 50/50 split of RECs is intended to be a compromise in which the customer would,
18 apparently, transfer half of his or her RECs to the utility for free. RUCO indicates that
19 commercial customers needing to retain all their RECs to meet their own goals would not
20 have to transfer any of their RECs to the utility.

21
22 Q. Is a 50/50 split a workable approach?

23
24 A. Probably not – there are too many unanswered questions and too many inappropriate
25 assumptions. First, system owners and utilities are not partners – they are parties to a
26 potential transaction, just as a utility and an independent power producer are parties to a
27 transaction to sell and purchase electricity. The parties have different objectives that may
28 be met by making a deal. The parties also have the option of not making a deal.

29
30 Second, there is no "compromise" unless the affected parties agree to it. A "compromise"
31 cannot be imposed on customers by the Commission or the utilities. In this case, RECs are
32 initially owned by the owners of the distributed renewable energy systems. RUCO's
33 proposal requires customers to hand over some of their property (RECs) to a utility without
34 compensation from the utility in order to obtain electric service. Why should customers
35 agree to hand over half their RECs to the utility in return for getting interconnection service
36 they are otherwise currently entitled to as utility customers? How would the utilities know
37 whether the customers have affirmatively agreed to transfer half their RECs and thus be
38 able to count the RECs? How could a customer be prevented from seeking compensation
39 from the utility for the utility's claiming ownership of the customer's RECs?

40
41 Third, what is the utility going to do with half the RECs? Would the utility have to try to get
42 customers to install twice as much distributed renewable energy as they otherwise would in
43 order to obtain sufficient RECs to meet regulatory requirements? How would they do this
44 without paying for the RECs?

1
2 Conclusions
3

4 Q. What should the Commission do in this matter?
5

6 A. Because of the interconnections among the Renewable Energy Standard, the distributed
7 renewable energy market, net metering policy, and rate design, a rush to change current
8 practices is counter-productive. In a complex system of interconnected factors, the
9 Commission cannot do just one thing. A comprehensive approach must be considered.
10

11 The Commission should reject Staff's Track and Monitor proposal, reject RUCO's 50/50 split
12 proposal, and hold off on eliminating the distributed renewable energy standard as
13 proposed by the utilities until there is concrete evidence that the distributed renewable
14 energy market can stand on its own without incentives, taking into account the effects of
15 any changes in net metering policy and significant changes in rate designs that affect the
16 economics of investor decisions regarding distributed renewable energy.
17

18 For now, the Commission should direct the utilities to either develop and implement an
19 auction type approach to acquire RECs or conduct a technical conference to obtain more
20 information. If the technical conference indicates that incentives are still needed because,
21 for example, the Commission modifies net metering practices, utilities could continue to
22 obtain RECs for distributed resources by employing the methods they previously used or by
23 using an auction.
24

25 Until the auction is set up or the technical conference is concluded (and appropriate
26 direction given by the Commission on the basis of the technical conference), the
27 Commission should, temporarily, waive compliance with the distributed renewable energy
28 requirements.
29

30 Q. Does this conclude your surrebuttal testimony?
31

32 A. Yes.

1 **BEFORE THE ARIZONA CORPORATION COMMISSION**

2 **COMMISSIONERS**

3 BOB STUMP, CHAIRMAN
4 GARY PIERCE
5 BRENDA BURNS
6 BOB BURNS
7 SUSAN BITTER SMITH



8 IN THE MATTER OF ARIZONA PUBLIC)
9 SERVICE COMPANY REQUEST FOR)
10 APPROVAL OF UPDATED GREEN POWER)
11 RATE SCHEDULE GPS-1, GPS-2 AND GPS-3.)

DOCKET NO. E-01345A-10-0394

12 _____
13 IN THE MATTER OF THE APPLICATION OF)
14 ARIZONA PUBLIC SERVICE COMPANY FOR)
15 APPROVAL OF ITS 2013 RENEWABLE)
16 ENERGY STANDARD IMPLEMENTATION FOR)
17 RESET OF RENEWABLE ENERGY ADJUSTOR.)

DOCKET NO. E-01345A-12-0290

18 _____
19 IN THE MATTER OF THE APPLICATION OF)
20 TUCSON ELECTRIC POWER COMPANY FOR)
21 APPROVAL OF ITS 2013 RENEWABLE)
22 ENERGY STANDARD IMPLEMENTATION)
23 PLAN AND DISTRIBUTED ENERGY)
24 ADMINISTRATIVE PLAN AND REQUEST FOR)
25 RESET OF RENEWABLE ENERGY ADJUSTOR.)

DOCKET NO. E-01933A-12-0296

26 _____
27 IN THE MATTER OF THE APPLICATION OF)
28 UNS ELECTRIC, INC. FOR APPROVAL OF ITS)
29 2013 RENEWABLE ENERGY STANDARD)
30 IMPLEMENTATION PLAN AND DISTRIBUTED)
31 ENERGY ADMINISTRATIVE PLAN AND)
32 REQUEST FOR RESET OF RENEWABLE)
33 ENERGY ADJUSTOR)

DOCKET NO. E-04204A-12-0297

34 **DIRECT TESTIMONY OF CARMINE TILGHMAN**

35 **ON BEHALF OF**

36 **TUCSON ELECTRIC POWER COMPANY AND UNS ELECTRIC, INC.**

37 **MARCH 29, 2013**

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1 **I. INTRODUCTION.**

2
3 **Q. Please state your name and business address.**

4 A. Carmine Tilghman, 88 East Broadway, Tucson, Arizona 85702.

5
6 **Q. By whom are you employed and in what capacity?**

7 A. I am the Director of Renewable Resources and Programs for Tucson Electric Power
8 Company ("TEP" or "Company").
9

10 **Q. Please describe your background and work experience.**

11 A. I served in the United States Navy from 1984-1993 as a Nuclear Reactor Operator in
12 Submarine Service. From 1993-1995, I worked as a Power Plant Operator for the
13 Biosphere II Project in Oracle, Arizona.
14

15 I was hired by TEP in 1995 as a Power Plant Operator. In 1996, I moved into TEP's
16 Wholesale Marketing Department where I held several positions in Energy Trading,
17 Marketing, Project Management, and Scheduling before being promoted to
18 Supervisor/Manager in 2003. From 2003-2008, I held supervisory positions in Trading,
19 Scheduling, and Procurement before taking over Utility Scale Renewable Energy
20 Development in 2008.
21

22 I received my Bachelor of Science in Business Management from the University of
23 Phoenix in 2000 and Master of Business Administration from the University of Phoenix in
24 2002.
25
26
27

1 In 2010, I took over all aspects of renewable energy development for both TEP and UNS
2 Electric, Inc. ("UNS Electric") (collectively, "Companies"). In 2012, I was promoted to
3 my current position of Director of Renewable Resources and Programs. In my current
4 position, I am responsible for the renewable resources and renewable resource programs
5 for the Companies, including compliance with the Arizona Corporation Commission's
6 ("Commission") Renewable Energy Standard and Tariff Rules ("REST Rules") (A.A.C.
7 R14-2-1801 through R14-2-1818)).
8

9 **Q. What is the purpose of your testimony?**

10 A. I am testifying on behalf of both TEP and UNS Electric. My testimony addresses: (i) the
11 Companies' understanding of the history of Track and Record, including the issues that led
12 to the initial proposal from Arizona Public Service Company ("APS"); (ii) the potential
13 processes to allow the Companies to meet the distributed generation requirements of the
14 REST rules when they no longer provide incentive payments, and as a result do not obtain
15 Renewable Energy Credits ("RECs") from the customer; and (iii) the Companies'
16 preferred approach of amending the REST Rules to eliminate the Distributed Generation
17 ("DG") requirement as currently designed.
18

19 **II. BACKGROUND.**
20

21 **Q. Please describe the Companies' understanding of the history of the proposed**
22 **"Track and Record" mechanism?**

23 A. In Decision No. 69127 (November 14, 2006)) the Commission adopted the REST Rules,
24 which require the Companies (and other affected utilities) to obtain a certain level of
25 energy each year from Eligible Renewable Energy Resources – the Annual Renewable
26 Energy Requirement. See A.A.C. R14-2-1804. A utility must meet the Annual Renewable
27

1 Energy Requirement by obtaining RECs from qualified renewable resources. See A.A.C.
2 R14-2-1804.A.

3
4 The REST rules also require that a certain portion of the Annual Renewable Energy
5 Requirement be satisfied through DG resources. A.A.C. R14-2-1805. To meet that
6 requirement, utilities must obtain RECs from eligible Distributed Renewable Energy
7 Resources. See A.A.C. R14-2-1805.A.

8
9 In order for the utility to prove compliance with the REST rules, a utility must document
10 that it had acquired the necessary RECs. A.A.C. R14-2-1803. Therefore utilities,
11 including the Companies, developed a contractual agreement in which the customer
12 transferred the DG RECs to the Companies in exchange for an incentive (either up front or
13 over time) that helped subsidize the cost of the renewable system. All renewable energy
14 production and related RECs from those DG systems would then be used to count towards
15 the utilities' DG requirement.

16
17 The problem that utilities now face is that the incentives they provide to their customers
18 are rapidly approaching zero. In the very near future, it will no longer necessary to
19 subsidize renewable energy systems with utility incentives or "rebates". In fact, there are a
20 number of DG systems, both installed and under construction in TEP's service area, that
21 have not taken any utility incentives. Without an incentive payment and related
22 contractual arrangement, utilities cannot claim the RECs from a DG system. Therefore,
23 although the mandate of serving a portion of our sales with renewable energy is being met,
24 the Companies cannot count that renewable generation as meeting the REST requirement
25 because they have not obtained the RECs as required under the REST rules.

1 **Q. How did this result in the proposed Track and Record process?**

2 A. While TEP's 2013 Renewable Energy Implementation Plan identified the issue of how to
3 comply with the DG requirements when incentives are no longer needed, TEP did not
4 specifically propose the "Track and Record" option. However, TEP did propose several
5 other options to address the issue (which are discussed in more detail below), one of
6 which was very similar to Track and Record. Arizona Public Service Company ("APS")
7 proposed the Track and Record process in its 2013 Renewable Energy Implementation
8 Plan.

9
10 Under the Track and Record process proposed by APS, the utility would demonstrate
11 compliance with the REST Rules by tracking and recording DG production from all DG
12 systems that were interconnected with APS's system *independent* of REC ownership.

13
14 In its Staff Report and proposed order on APS's 2013 Plan, the Commission's Utilities
15 Division ("Staff") recommended approval of APS's Track and Record proposal. The
16 Staff Reports and proposed orders for TEP's and UNS Electric's 2013 Plans also
17 recommended Track and Record as the process for demonstrating compliance with the
18 REST Rules.

19
20 **Q. Is TEP currently facing the issue of interconnected DG systems that have not**
21 **received incentives?**

22 A. Yes. As noted in TEP's 2013 Renewable Energy Implementation Plan, TEP had six
23 residential customers and one commercial customer that had requested net-metering (*i.e.*
24 interconnection with TEP) without receiving a utility incentive. These customers
25 represent an aggregate total of more than 4 MW of distributed generation. Since that
26 time, an additional 50.03 kW of generation in TEP's service area has requested net
27

metering, without receiving a utility incentive. This capacity represents is a combination of residential solar and commercial wind projects, all of which applied for interconnection on our system.

III. THE COMPANIES' POSITION ON DG COMPLIANCE.

Q. What did TEP propose to address DG compliance in the absence of incentives?

A. In its 2013 Renewable Energy Implementation Plan filed on July 2, 2012, TEP set forth several possible options to address the issue:

1. Change or waive the existing Resource Portfolio Standard ("RPS") to eliminate either the DG requirement, or the requirement to retire RECs associated with the customer-sited distributed generation system, and allow the utility to report metered production data in order to show the percentage of sales associated with renewable energy;
2. Allow utilities to modify their existing net-metering tariffs to require customers to surrender all credits and environmental attributes in exchange for net-metering;
3. Allow utilities to meet the RPS DG requirement by showing a percentage of their sales through metered data without the requirement of retiring RECs (and without altering the existing rules)¹; and
4. In the absence of existing rule changes, allow the utilities to request waivers for meeting the DG requirement through the use of REC retirement and allow the utility to show compliance in an alternative manner.

Q. What do the Companies believe is the appropriate action to resolve this issue?

A. The Companies recommend that the Commission reopen the REST Rules and eliminate the DG requirement as currently designed. Any other solution would require some sort of waiver of the REST Rules. To be clear, the Companies are not advocating for any change to the REST Rules other than eliminating the DG requirement. Utilities would still need to meet the overall Annual Renewable Energy Requirement, except that there would no longer be specific requirements for certain types of generation.

¹ This option is similar to Track and Record.

1 The original intent of utility incentives was to subsidize the cost of customer-owned
2 systems in order to achieve the benefits of DG. As we approach the time when the cost of
3 renewable energy systems has decreased to the point where utility incentives are no longer
4 needed, it is simply not necessary or appropriate to hold the utilities responsible for
5 achieving a customer behavior based standard (i.e. emplacement of DG resources) in
6 which the utility does not participate in the decision-making process. In short, since the
7 Company will not be offering any incentives, it no longer influences the customer's
8 decision. As such, there is no longer a direct connection between the customer's decision
9 to install DG and the Companies' ability to comply with the Standard. Therefore, the DG
10 carve out should be eliminated.

11
12 The Companies believe revising the REST Rules in a manner to reflect the new realities of
13 the DG market is the best long-term solution to the issue we are now facing. It provides
14 more certainty to the utilities and the renewable industry and it is more conducive to
15 integrated resource planning. However, we would still need a short-term solution to
16 the issue before the REST Rules are revised. Potential interim options are addressed
17 below.

18
19 **Q. Do the Companies believe the proposed Track and Record mechanism could be an**
20 **appropriate resolution?**

21 **A.** The Companies have concern with the Track and Record mechanism, both as an interim
22 approach and as a long-term solution. First, while the Companies initially did not have any
23 specific objections to the Track and Record concept, they have since learned that at least
24 one federal entity would be unable to comply with an applicable federal Executive Order
25 should TEP effectively claim their RECs through Track and Record. The Companies
26 recognize that the Commission is not bound by such Executive Orders, but the Companies
27

1 would like to acknowledge that the Track and Record Mechanism presents a unique
2 problem for federal entities (some of which are customers of the Companies) operating
3 under that Executive Order.

4
5 Second, the Track and Record Mechanism will also require a waiver of the REST rules.
6 The REST rules state that *"any contract by an affected utility for purchase or sale of*
7 *energy and/or Renewable Energy Credits to meet the requirements of this rule shall*
8 *explicitly describe the transfer of rights concerning both energy and Renewable Energy*
9 *Credits."* A.A.C. R14-2-1803.F. Additionally, the REST states that *"a Renewable Energy*
10 *Credit is owned by the owner of the Renewable Energy Resource from it was derived*
11 *unless specifically transferred."* A.A.C. R14-2-1803.C. The Companies are concerned
12 that there is no actual transfer of the legal title to the RECs under the proposed Track and
13 Record. Therefore, a utility would likely need a waiver of those REST rule requirements
14 as part of the Track and Record approach.

15
16 **Q. What do you recommend in the interim before the REST rules are revised?**

17 A. The Companies understand that rulemaking will take some time. Perhaps the simplest
18 solution would be to grant utilities a full waiver from the Distributed Renewable Energy
19 Requirement until the REST rules are revised. However, there are other options that could
20 also serve as a bridge during the rulemaking process:

- 21 1. As stated above, and should the Commission agree that it is appropriate to amend
22 the existing REST Rules, the Companies believe a full waiver from the Distributed
23 Renewable Energy Requirement would be appropriate until the REST rules have
24 been modified. This would allow the Companies to meet the REST Rules
25 percentage requirement with RECs from all resources while the REST Rules are
26 amended, without penalizing the Companies for non-compliance.

1 2. As an alternative to a waiver, the Commission also could requiring a customer to
2 transfer its DG system's RECs to a utility in exchange for net-metering as fair
3 compensation for the benefits associated with net-metering. This proposal would
4 require the utilities to file updated net-metering tariffs that would require transfer of
5 RECs in exchange for net metering.

6
7 3. Should the Commission determine neither of the above proposals is appropriate as
8 an interim solution, the Companies propose a third solution in which the
9 Companies would institute a "*Track and Reduce*" mechanism. This option would
10 allow utilities to report the number of kWh sales served from customers renewable
11 energy systems where no transfer of RECs took place – and then reduce the
12 utility's Annual Renewable Energy Requirement by that amount. The customer
13 retains ownership of the RECs and would be free to sell them in any market;
14 however, the utility's requirement would be reduced by those amounts. This
15 proposal would also require a waiver of the Rules the Distributed Renewable
16 Energy Requirement, since the utility would still not have the RECs to prove
17 compliance as required under the REST Rules.

18
19 **Q. In the absence of modifying the REST Rules as previously discussed, do the**
20 **Companies support the concept of annual waivers?**

21 A. Many of the possible solutions to the DG compliance issue involve the need for some sort
22 of waiver of the REST Rules. While the Companies acknowledge that the Commission
23 has the authority to grant waivers, the Companies believe it would create unnecessary
24 uncertainty for the utilities and the industry. Because the Companies would require a
25 waiver each and every year, the Companies believes the best approach is to provide a
26 solution to the issue, and eliminate the DG requirements under the REST Rules, rather than
27

1 subject the Companies to seeking annual waivers from the current and future
2 Commissions.

3
4 **Q. What is the Companies' position on procuring DG RECs through an auction process?**

5 A. Some parties have previously submitted comments on Staff's Track and Record
6 recommendation and proposed that utilities be required to hold an auction to procure DG
7 RECs. Even if the Companies supported maintaining the DG requirement, it could not
8 support a program that would require additional payments through an auction mechanism
9 as long as the current net-metering rules are in place. This solution would end up requiring
10 the utilities – and ultimately the *ratepayers* – to further subsidize systems while creating an
11 artificial REC value in order to obtain RECs. This approach simply creates an alternative
12 subsidy mechanism that the utility (and ultimately the ratepayer) must pay in order to
13 comply with the REST Rules. Given that these incentives will not be needed in the near
14 future, the Companies cannot support any mechanism that simply replaces one subsidy for
15 another.

16
17 **Q. Does that conclude your direct testimony?**

18 A. Yes.

1 **BEFORE THE ARIZONA CORPORATION COMMISSION**

2 **COMMISSIONERS**

3 BOB STUMP, CHAIRMAN

4 GARY PIERCE

5 BRENDA BURNS

6 BOB BURNS

7 SUSAN BITTER SMITH

8 IN THE MATTER OF ARIZONA PUBLIC)
9 SERVICE COMPANY REQUEST FOR)
10 APPROVAL OF UPDATED GREEN POWER)
11 RATE SCHEDULE GPS-1, GPS-2 AND GPS-3.)
12)

DOCKET NO. E-01345A-10-0394

13 IN THE MATTER OF THE APPLICATION OF)
14 ARIZONA PUBLIC SERVICE COMPANY FOR)
15 APPROVAL OF ITS 2013 RENEWABLE)
16 ENERGY STANDARD IMPLEMENTATION FOR)
17 RESET OF RENEWABLE ENERGY ADJUSTOR.)
18)

DOCKET NO. E-01345A-12-0290

19 IN THE MATTER OF THE APPLICATION OF)
20 TUCSON ELECTRIC POWER COMPANY FOR)
21 APPROVAL OF ITS 2013 RENEWABLE)
22 ENERGY STANDARD IMPLEMENTATION)
23 PLAN AND DISTRIBUTED ENERGY)
24 ADMINISTRATIVE PLAN AND REQUEST FOR)
25 RESET OF RENEWABLE ENERGY ADJUSTOR.)
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DOCKET NO. E-01933A-12-0296

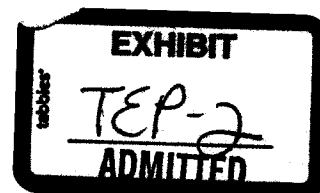
27 IN THE MATTER OF THE APPLICATION OF)
UNSE ELECTRIC, INC. FOR APPROVAL OF ITS)
2013 RENEWABLE ENERGY STANDARD)
IMPLEMENTATION PLAN AND DISTRIBUTED)
ENERGY ADMINISTRATIVE PLAN AND)
REQUEST FOR RESET OF RENEWABLE)
ENERGY ADJUSTOR)

DOCKET NO. E-04204A-12-0297

24 **REBUTTAL TESTIMONY OF CARMINE TILGHMAN**

25 **ON BEHALF OF TUCSON ELECTRIC POWER AND UNS ELECTRIC**

26 **MAY 8, 2013**



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1 **I. INTRODUCTION.**

2
3 **Q. Please state your name and business address.**

4 A. My name is Carmine Tilghman and my business address is 88 East Broadway, Tucson,
5 Arizona, 85701.
6

7 **Q. Did you file Direct Testimony in this proceeding?**

8 A. Yes.
9

10 **Q. On whose behalf are you filing your Rebuttal Testimony in this proceeding?**

11 A. My Rebuttal Testimony is filed on behalf of Tucson Electric Power Company and UNS
12 Electric, Inc. ("TEP and UNS Electric" or collectively the "Companies").
13

14 **Q. What is the purpose of your Rebuttal Testimony?**

15 A. The purpose of my Rebuttal Testimony is to respond to pre-filed direct testimony of Bob
16 Gray for the Arizona Corporation Commission Utilities Staff ("Staff"), Lon Huber for the
17 Residential Utility Consumer Office ("RUCO"), and several of the other Intervenors.
18

19 **Q. Please summarize your Rebuttal Testimony?**

20 A. The Companies generally support Staff's "Track and Monitor" proposal because it is very
21 similar to the Companies' "Track and Reduce" proposal. However, the testimonies from
22 the other parties, including Staff, do not address a long-term solution to the issue of what
23 to do when incentives are no longer being paid for Renewable Energy Credits ("RECs").
24 It seems that the parties prefer ongoing waivers of the Renewable Energy Standard and
25 Tariff Rules ("REST Rules") instead of addressing the underlying issues caused by the
26 current structure of the REST Rules. TEP and UNS Electric believe that "Track and
27 Monitor" is an appropriate interim solution until the REST Rules can be revised to

1 eliminate the REST Rules' Distributed Renewable Energy Requirement ("DG
2 Requirement").

3
4 **II. REBUTTAL TO STAFF.**

5
6 **Q. What is the Companies' position regarding Staff's Track and Monitor proposal?**

7 A. Staff's Track and Monitor proposal is almost identical to the Track and Reduce
8 mechanism that I proposed in my Direct Testimony. In general, the Companies support
9 Staff's proposal.

10
11 **Q. Do the Companies have specific comments in response to Staff's reasoning for its
12 Track and Monitor proposal?**

13 A. Yes. While the Companies generally support a Track and Monitor mechanism, they are
14 concerned that Staff's desire to be "minimally invasive to the REST rules" will delay and
15 may preclude the necessary long-term course of action. The Companies recognize that
16 many of the interested parties are "comfortable" with the existing REST Rules and that
17 significant change to the REST Rules may be difficult to agree upon in whole. However,
18 without incentives being paid for RECs, Affected Utilities will continue to require
19 waivers of the REST Rules until they are modified, even under the Track and Monitor
20 proposal. The Companies understand that changing the REST Rules may be challenging;
21 but ultimately the DG Requirement must be addressed. The Companies believe that a
22 rulemaking docket should be opened to address eliminating the DG Requirement from
23 the REST Rules. If DG is truly the least cost means to meet the annual requirements, then
24 there is no longer a need to have a separate carve out for DG.

1 **Q. Does Staff's Track and Monitor proposal still allow the utilities to account for the**
2 **amount of renewable energy being used to provide electric service absent the DG**
3 **Requirement?**

4 A. Yes. Eliminating the DG carve out and applying Staff's proposed Track and Monitor
5 mechanism to the RES requirement in whole would capture all renewable systems
6 interconnected to the system, while at the same time alleviating the Companies' concerns
7 related to maintaining the DG carve out requirement. Applied in this manner, Staff's
8 Track and Monitor mechanism would reduce the utilities' percentage requirement by the
9 amount of renewable energy interconnected to their systems – and allow the utilities to
10 meet the remaining RES percentage requirement through the use of the other eligible
11 renewable energy resources.

12
13 **Q. Would this also allow the system owners to sell their RECs into voluntary markets,**
14 **as many of the Intervenor discussed?**

15 A. Yes. Any RECs not acquired by the utility to meet compliance, could then be sold by
16 DG system owners into other markets. The renewable energy from these systems would
17 not be used to meet any compliance targets under the "Track and Monitor" approach, so
18 the fears about these being valueless is unwarranted and premature.

19
20 **Q. Do the Companies believe the elimination of the DG Requirement should still be**
21 **considered?**

22 A. Yes. While the Companies recognize Staff's concerns about eliminating the DG
23 Requirement, maintaining a DG carve out is no longer necessary; and it is inappropriate
24 to have utility ratepayers continue to subsidize this market. Any rulemaking to modify
25 the REST Rules would take Staff's concerns into account. Ultimately, the Companies
26 believe it is a policy decision that will be made by the Commission.

27

1 Further, market forces and customer choice is now driving the DG market more than any
2 standard the Commission chooses to preserve. Indeed, several of the Intervenor noted
3 that DG is not driven by the utility incentives and the DG Requirement. For example,
4 Ms. Fellman for NRG Solar agrees (at page 4 of her Direct Testimony) that "utilities have
5 no ability to drive customer behavior in the present and the future." Mr. Huber for
6 RUCO noted (at page 4 of his Direct Testimony) that rate design, not (utility) incentives,
7 is the main market driver for installing residential DG. Yet, ironically those Intervenor
8 still insist on preserving the DG Requirement.

9
10 **III. REBUTTAL TO RUCO.**

11
12 **Q. Do the Companies have any comments regarding Mr. Huber's testimony on behalf**
13 **of RUCO?**

14 **A.** Yes. The Companies appreciate RUCO's stated guidelines, as well as RUCO's
15 comments that utility incentives are no longer the primary driver of residential DG.
16 However, while the Companies are aware that policy initiatives at the Federal and State
17 levels may impact the future of renewable energy, now is the time for the Commission to
18 address utility subsidies for DG and whether the DG carve out should continue. To wait
19 until other policy decisions are made will mean ratepayers will pay more than is
20 necessary to procure the same amount of renewable energy.

21
22 While changes to Federal or State policy may affect the value of DG, there are clearly
23 other forces that are driving the DG market. It is simply not necessary to wait for future
24 policy initiatives to implement Staff's Track and Monitor approach. Further, this does
25 not preclude additional changes in response to subsequent Federal or State action to align
26 the Commission's goals with such policy actions. The Companies do not believe that this
27

1 issue should continue to be ignored based on potential or future policy changes that may
2 or may not come about.

3
4 **IV. REBUTTAL TO OTHER INTERVENORS.**

5
6 **Q. Do you have any general comments on the other Intervenor's testimony?**

7 A. Yes. The Intervenor's do not propose long-term solutions to the issue of DG Requirement
8 compliance in the absence of incentive payments. To the extent they propose solutions
9 (other than a temporary waiver), the solutions involve continuing payments for RECs.
10 However, those solutions effectively perpetuate the payment of an incentive for RECs to
11 meet the DG Requirement and result in an unnecessary cost to ratepayers.

12
13 Moreover, the Intervenor's assertions that the Track and Monitor proposal devalues or
14 double-counts RECs is misplaced. Any value of RECs to the Affected Utilities is the
15 result of the legal fiction created under the REST Rules – they are a mechanism to track
16 compliance. Track and Monitor is an appropriate interim solution but ultimately the
17 REST Rules need to be revised to address the appropriate scope and nature of DG
18 Requirement in the future.

19
20 **A. Rebuttal to NRG Solar.**

21
22 **Q. Do the Companies have any comments regarding NRG Solar's testimony?**

23 A. Yes. First, Ms. Fellman claims (at page 6 of her Direct Testimony) that the Companies'
24 proposed Track and Reduce mechanism, which is almost identical to the Staff's proposed
25 Track and Monitor mechanism, would compromise the utilities' Annual Renewable
26 Energy Requirement within the REST Rules. However, Ms. Fellman provides no
27 additional explanation or evidence to support this claim. In fact, the ability to track

1 renewable energy production and adjust the required percentage, regardless of REC
2 ownership, would accomplish what the REST Rules were intended to do; provide
3 evidence that a portion of an Affected Utility's retail load is being served by renewable
4 energy.

5
6 Second, Ms. Fellman asserts (at page 4 of her Direct Testimony) that the underlying
7 Commission policy objective is to allow customers the opportunity to participate in the
8 utilities' respective renewable energy plans through solar installations on their homes,
9 businesses, and schools – and that the elimination of the DG Requirement would disturb
10 this policy objective. This is simply not true. Numerous entities – both residential and
11 non-residential – have installed, or are installing, solar and wind systems without any
12 regard for the Companies' incentives or the DG Requirement. This is the result of market
13 forces and policies outside the control of the Companies and highlights the fact that a DG
14 carve out is no longer necessary.

15
16 **B. Rebuttal to Department Of Defense and All Other Federal Executive**
17 **Agencies.**

18
19 **Q. Do the Companies have any comments or concerns regarding the testimony**
20 **provided on behalf of Rebuttal to Federal Agencies Testimony?**

21 **A.** Yes. Ms. Cordova states (at page 3 of her Direct Testimony) that she believes
22 elimination of the DG Requirement will discourage of growth of distributed renewable
23 energy production in Arizona. While Ms. Cordova notes the significant investment the
24 Veteran's Administration ("VA") has made in renewable energy in Arizona, including
25 more than 4 MW worth of capacity in Tucson alone, she fails to mention that those
26 investments were made entirely irrespective of the Company's DG Requirement under
27

1 It is clear that the VA's \$50 million investment for 4 MW is not dependent on any utility
2 incentives. Consequently, the VA is making those investments independent of whether
3 the utilities have any DG Requirement, or whether a carve out exists in the REST Rules.
4 For these reasons, the Companies also dispute Ms. Cordova's statement that a carve out is
5 necessary to promote DG growth.

6
7 Further, Ms. Cordova asserts (at page 4 of her Direct Testimony) that the Companies'
8 proposed Track and Reduce mechanism results in double counting of RECs. The
9 Companies disagree with that assertion, as no credit is taken for those systems that are
10 "monitored"; only the REST percentage requirement is affected. Staff has come to a
11 similar conclusion with its Track and Monitor proposal.

12
13 **Q. Do you have any concerns about Ms. Cordova's proposal that utilities continue to**
14 **purchase RECs to meet the DG Requirement?**

15 **A.** Yes. That proposal simply continues payments for RECs (as is currently the case with
16 incentives) and creates an unnecessary cost for ratepayers. For RECs to be purchased
17 while maintaining the DG Requirement, effectively results in an unnecessary subsidy that
18 will be paid by non-participating ratepayers. The Companies adamantly oppose any
19 additional and unnecessary subsidies that would further burden our ratepayers.

20
21 **Q. Do you have comments on Ms. Ahsing's direct testimony?**

22 **A.** Yes. Ms. Ahsing testified on behalf of the Federal Agencies as a representative of the
23 Department of the Army. In her Direct Testimony, Ms. Ahsing distinguished (at page 8,
24 n.1) between the Companies' definition of distributed energy and the definition provided
25 by APS. To clarify, the Companies did not define distributed energy. The Companies
26 only provided the definition of distributed energy set forth in the REST Rules. Ms.
27 Ahsing also stated (at page 5) that one REC represents one megawatt-hour of energy.

1 But under the REST Rules, one REC is equivalent to one kilowatt-hour of energy.
2 A.A.C. R14-2-1803.A.
3

4 **Q. Do you agree with Ms. Ahsing that eliminating the DG carve out negatively impacts**
5 **the value of RECs?**

6 A. No. Ms. Ahsing claims (at pages 8-9 of her Direct Testimony) that the elimination of the
7 DG carve out would negatively impact the value of REC's and impact the economic
8 evaluation of renewable projects by the Energy Initiative Task Force ("EITF").
9 However, simply removing the DG Requirement has no greater impact to the value of
10 RECs than currently exists in the absence of any utility incentive. It is not the
11 responsibility of the utilities or its ratepayers – or even the Commission - to preserve
12 some set value for select customers for their RECs.
13

14 Further, Ms. Ahsing also notes (at page 5 of her Direct Testimony) that RECs are not
15 required for the Army to meet the National Defense Authorization Act of 2007
16 ("NDAA") goal for the Army. As I previously stated, the Companies continue to see
17 renewable energy development in the absence of utility incentives, and challenges the
18 statements that the DG growth or economic viability is impacted by removing the DG
19 Requirement.
20

21 **C. Rebuttal to Vote Solar Initiative.**
22

23 **Q. Do the Companies agree with VSI's statement that elimination of the DG**
24 **Requirement "defeats the purpose of the renewable energy standard"?**

25 A. No. The REST Rules were not created for the purpose maintaining a customer-based
26 distributed generation carve out, but rather to "reduce air pollution emissions and their
27 associated external costs and to promote and safeguard the security, convenience, health

1 and safety of Affected Utilities' customers and public in Arizona." (See e.g. Decision No.
2 69127 (November 14, 2006) at Finding of Fact 234). The DG Requirement can be
3 accomplished on either side of the meter and *does not need to be owned by a customer*. It
4 was included to "improve system reliability" (See A.A.C. R14-2-1805(A)).
5 Eliminating the DG Requirement does not "defeat the purpose of the Renewable Energy
6 Standard" – keeping in mind that all of the benefits of distributed generation can be
7 achieved through considerably more cost-effective, larger scale projects that are directly
8 connected to the customer's distribution system.
9

10 **Q. Would VSI's proposal increase the costs of renewable energy to ratepayers ?**

11 A. Yes. VSI's proposal is to maintain the current DG Requirement in the REST Rules and
12 to require the utilities to procure the RECs necessary to meet the existing standard. This
13 is an additional, unnecessary cost of compliance that would further subsidize the few
14 participating ratepayers, while the many non-participating ratepayers would bear the
15 burden of those costs.
16

17 **Q. Do the Companies agree with VSI's assertion that because of the DG Requirement**
18 **"the money spent on energy stayed in Arizona"?**

19 A. No. This is a common, yet false, claim that the industry makes to justify the substantial
20 amount of renewable energy subsidies. With the exception of the labor and some of the
21 electrical components, the majority of the money spent on renewable systems went out-
22 of-state, and often out of the country, as many panel manufacturers were not located
23 within the United States. Even today, there are very few components used in a typical
24 solar system that are manufactured here in the state of Arizona.
25

26 **Q. Does this conclude your rebuttal testimony?**

27 A. Yes.

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7. Please state to what extent CRS was involved in the rulemaking that lead to the Commission adopting the Arizona Renewable Energy Standard and Tariff Rules in Docket No. RE-00000C-05-0030. Please indicate whether CRS provided any comments on the Commission's rulemaking in that docket and when those comments were provided.

RESPONSE:

CRS did not provide any comments during the development of the REST rulemaking.

8. Regarding Ms. Martin's testimony starting on page 5 at line 7, she states the following: "CRS's role in this market is to protect the renewable energy purchasers against double counting and false claims, and ensure the purchaser of renewable energy that they are receiving all of the attributes of renewable energy generation that they purchased."

- a. What is meant by the "purchaser" in this statement?

RESPONSE:

Purchaser refers to organizations and individuals who buy renewable energy and RECs in the voluntary market.

- b. Is this statement in reference to the voluntary market for RECs?

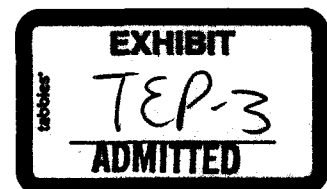
RESPONSE:

It is in reference to the voluntary market for renewable energy including RECs.

- c. If the response to b. is yes, then please confirm that the statement refers to purchases of renewable attributes or RECs that are made above and beyond affected utilities are required to procure under applicable state standards or requirements.

RESPONSE:

Green-e Energy will only certify renewable energy or RECs that are not used to meet state standards or requirements.



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- d. Is it CRS's contention that the Commission should facilitate a voluntary market for RECs above the compliance market established in the REST Rules? If so, please explain CRS's justification for its position.**

RESPONSE:

It's CRSs contention that actions by the Commission may adversely impact the ability of Arizona citizens and organizations to participate in the voluntary market.

- 9. If CRS's Green-e certification program applies only to voluntary markets, please explain the relevance Ms. Martin's testimony regarding double counting as it pertains to the Arizona REST Rules and deciding how affected utilities should best achieve compliance.**

RESPONSE:

The compliance and voluntary markets operate in the same overall renewable energy market and actions in the compliance market can have impacts in the voluntary market, and vice versa. Some proposed changes to the REST rules would impact the ability of Arizona citizens and organizations to participate in the voluntary market.

- 10. Please provide any and all of the "attributes of renewable energy generation" referred to on page 5, lines 10 through 11, of Ms. Martin's testimony. Please confirm that the attributes of renewable energy generation is separate from the energy produced by the facility. Please also indicate whether the tax benefits of renewable energy are bundled into RECs and explain your response.**

RESPONSE:

Attributes of renewable generation is a term of art intended to represent all the benefits of renewable energy, excluding the underlying electricity. The Western Renewable Energy Generation Information System (WREGIS), which includes Arizona in its geographic footprint, uses the following definition of attributes.

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- 13. Regarding page 7, lines 18 through 20, of Ms. Martin's testimony – what is meant when the National Standard states that an REC cannot be used in a Green-e product when the electricity is already "used" to meet a requirement? Explain how the use of electricity would nullify the opportunity for Green-e certification. Who is the entity that would be using the REC or electricity under the National Standard? Provide any and all examples of using electricity to meet a mandate that would nullify certification under the Green-e certification program.**

RESPONSE:

Green-e Energy will not certify the sale of a REC if that REC or the electricity with which it is associated is used by, or counted on behalf of, an electricity seller (or other entity) to meet a state requirement or compliance obligation.

In general, the entity that uses Green-e Energy certified RECs or renewable energy is the purchaser.

Below are some examples of when using electricity to meet a mandate would result in Green-e Energy disallowing certification of that electricity and/or its associated RECs. This is not a comprehensive list—there are many potential scenarios that would result in Green-e not certifying RECs. In such cases, the Green-e Governance Board determines if use of electricity to meet a mandate precludes certification.

- Electricity purchased from a generator is used by an entity with a compliance obligation to meet a state RPS or similar law or regulation, or in any other way is counted towards that entity's obligation.
- Electricity generated by a facility owned by an entity with a compliance obligation is used to meet a state RPS or similar law or regulation, or in any other way is counted towards that entity's obligation.
- Electricity generated by a renewable energy facility is used to meet a state RPS or similar law or regulation, or in any other way is counted towards an entity's compliance obligation, and the entity with the compliance obligation does not own the RECs.

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14. Please confirm the following:

- a. The CRS acknowledges that a Renewable Energy Credit (REC) and energy (kWh) are separate commodities (as described in the definition of a REC found in Appendix B of the Green-e Energy Code of Conduct and Customer Disclosure Requirements); and
- b. That a REC may be traded separately from the energy.

RESPONSE:

A REC and electrical energy are separate commodities and may be traded and sold separately.

15. Please confirm that the CRS Green-e certification program requires the aggregation of both the energy and REC to qualify for certification, even though a REC may be traded separately?

RESPONSE:

Green-e Energy certification does not require that both energy and REC be aggregated together to qualify for certification.

16. If a REC has value and can be traded separately from the energy, does CRS agree that the energy could also be tracked separately, even if that precludes the REC from being certified as part of CRS's Green-e Energy certification program? If CRS does not agree, then please fully explain your response.

RESPONSE:

Energy can be tracked and traded separately from the associated RECs. Tracking has bearing on whether the REC can be certified if tracking is applied in such a way as to be equivalent to a use claim on the renewable attributes.

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-
- 17. How would CRS describe energy produced from a renewable energy facility, but where the renewable attributes have been disaggregated from that energy and incorporated into a “renewable energy credit.”? Is *null electricity* an accurate description of this energy according to CRS? Does CRS agree that such electricity would not be derived from a conventional resource as defined in the Arizona REST Rules (e.g., from coal, natural gas, or any hydrocarbon-based fuel)?**

RESPONSE:

Null electricity is an accurate description. Null electricity is any generation that does not have attributes associated with it.

- 18. Regarding page 11 of Ms. Martin’s testimony, please confirm that WREGIS is covered by the Western Electric Coordinating Council (WECC). Please also confirm that WECC is the Regional Entity responsible for coordinating and promoting Bulk Electric System reliability in the Western Interconnection. Please also describe under what circumstances would WREGIS track renewable energy produced from distributed generation systems on customer premises, such as single-family residences and small businesses.**

RESPONSE:

WREGIS covers the WECC geographic footprint and is operated by WECC. According to the WECC website “*The Western Electricity Coordinating Council (WECC) is the Regional Entity responsible for coordinating and promoting Bulk Electric System reliability in the Western Interconnection.*”³ WREGIS creates certificates for generators that register with WREGIS. There are many distributed generation solar facilities tracked in WREGIS, as listed in the WREGIS Active Generators public report.⁴

³ Western Electricity Coordinating Council, About WECC
<http://www.wecc.biz/ABOUT/Pages/default.aspx> (accessed June 18, 2013).

⁴ Western Renewable Energy Generation Information System,
<https://portal2.wregis.org/myModule/rpt/myrpt.asp?r=111> (accessed June 18, 2013).

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- d. Please provide examples within the FTC green guides involving a utility using energy to meet compliance with state renewable mandates which the FTC indicates would be deceptive and provide the citation to the regulation containing the example.

RESPONSE:

I do not purport to be an expert in FTC law. None of the examples provided in the Green Guides address the exact scenario put forward in this question. The FTC Green Guides is not an exclusive list of all possible examples, but rather provides a limited number of examples to illustrate principles. The purpose of the discussion of the FTC Green Guides in my testimony is to demonstrate that the FTC supports REC ownership as the basis for renewable energy use claims, and to illustrate the FTC's interpretation that renewable energy claims made based on electricity use without REC ownership are deceptive.

20. Regarding Ms. Martin's testimony starting on page 13 at line 11, please explain fully how, in CRS's view, tracking the electricity (kWh) generated from distributed renewable generation facilities nullifies a REC owner's ability to sell the REC if the renewable attributes were disaggregated from the energy produced.

RESPONSE:

This question misstates the meaning of my testimony. It is not the tracking of electricity alone that would disqualify a REC owner's ability to sell a REC in a Green-e Energy certified transaction, but the use of that information to determine compliance with the REST.

21. If the utility categorizes the kWh produced from the renewable energy facility as *null electricity* and not renewable power, would CRS still claim that the REC owner's ability to make their own claim or sell the REC be compromised in the same fashion as if the kWh were classified as renewable power. Please explain fully CRS's response.

RESPONSE:

According to the Green-e Energy National Standard, if the electricity is used to meet a renewable energy standard, then it is not eligible for Green-e Energy certification.

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22. Regarding page 14 of Ms. Martin's testimony starting at line 1, what would CRS view as giving the utilities "credit" for renewable energy generation such that it would constitute a claim on the REC. Please describe fully any and all proposals that CRS views as giving the utilities such "credit."

RESPONSE:

In CRS's view, determining that the utility is in compliance with a state requirement based on that renewable energy generation constitutes giving the utility credit for renewable energy generation and a claim on the REC.

Parties' proposals have changed during the course of this proceeding. The relevant details of many plans have yet to be determined. For example, proposals including waivers are not always clear about what would be waived and how specifically a waiver is defined. Key factors in determining if a proposal gives a utility credit for renewable energy generation include whether the REST rules will be changed, and if a utility would be determined to be in compliance with the prior DE requirement under the REST. The Green-e Energy certification program rules require that any time kWh are used to determine compliance with a policy such as the REST, the result is a claim on the REC.

In general, proposals that use information collected through monitoring of kWh production of DE facilities to determine compliance with the REST without acquisition of RECs create a claim on the REC. For example, in the Testimony Summary of Staff witness Robert G. Gray, May 31, 2013, the description of Track and Monitor indicates that the Commission would be modifying the treatment of distributed energy for purposes of determining whether jurisdictional utilities are in compliance with the REST rules. My understanding of this description is that the utility would be claiming credit for renewable energy generation.

By contrast, use of an auction mechanism or a standard offer process to obtain the requisite RECs would create a claim only on those RECs that the utility had appropriately acquired, and other DE RECs not acquired through the auction or standard offer would remain eligible for certification by Green-e Energy.

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- 23. Please explain whether, if an affected utility provides resource information regarding kWh production to Commission Utilities Division Staff, that would disqualify associated RECs in CRS's view.**

RESPONSE:

If an affected utility provides resource information regarding kWh production to the Commission Utilities Division Staff, it would only disqualify RECs if the information were used to determine compliance (apart from compliance with the section of the REST that requires such reporting).

- 24. Please indicate what Ms. Martin is referring to when she states in her testimony, starting on page 14 at line 23, that "it is clear that the REST is waived." Is she referring to only the annual distributed renewable energy requirement under A.A.C. R14-2-1805 (as was described in the question) or is she referring to the annual renewable energy requirement under A.A.C. R14-2-1804?**

RESPONSE:

As I understand it, RUCO's baseline proposal would eliminate a single year's incremental DE requirement as specified in the REST. The section of my testimony addressed in this question is referring to the treatment of the DE requirement. However, if the elimination of the DE requirement is not replaced with an equivalent requirement for other eligible generation, then the REST may be reduced overall. I believe that some aspects of the RUCO plan have yet to be resolved.

- 25. Regarding Ms. Martin's testimony starting at page 15 on line 1, please explain what is meant when Ms. Martin states that RUCO's "baseline" proposal "disconnects kWh generated from determination of REST compliance." How does RUCO's proposal to set a "baseline" value at or near the original compliance level significantly distinct from the energy associated with meeting the REST?**

RESPONSE:

The key difference is whether or not the Commission would be determining that the REST requirements were met, or if the REST requirements were reduced. It

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is my understanding that under RUCO's proposal, there would not be a determination that the current REST is being met. However, not all aspects of this proposal are fully described, and it is possible my interpretation could change depending on the details of how it is implemented.

26. Does Ms. Martin agree, when discussing RUCO's "baseline" proposal, that by meeting the "baseline" expressed in capacity (MW) and describing market level, an affected utility would essentially meet the annual distributed renewable energy requirement in the REST Rules; conversely, in the absence of meeting the "baseline", an affected utility would not meet that requirement? Does Ms. Martin agree that, by establishing a "baseline" for compliance purposes as RUCO proposes, the distributed renewable energy requirement would be met?

RESPONSE:

I do not agree that the establishment of a baseline, whether it is met or not, would determine a utility's compliance with the REST. I understand that RECs are required to determine REST compliance.

27. CRS's National Standard under its Green-e certification program at page 10 (Section III.E.2.) describes an example of double-counting as follows:

When the same REC is claimed by more than one party, including any expressed or implied environmental claims made pursuant to electricity coming from a renewable energy resource, environmental labeling or disclosure requirements. This includes representing the energy from which RECs are derived as renewable in calculating another entity's product or portfolio resource mix for the purposes of marketing or disclosure;

Please indicate whether it is CRS's position that the use of capacity to determine market self-sufficiency alone avoids double counting under this or any of the other examples set forth in Section III.E. If not, please indicate what other components of RUCO's "baseline" proposal are essential to avoid double counting.

RESPONSE:

The use of capacity instead of kWh does not alone avoid double counting. A key factor in determining double counting under this proposal is whether the

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Commission is determining that the utilities are in compliance with the REST or if they are determined to be out of compliance with the REST.

28. Ms. Martin states on page 14, starting on line 22, the waiver is a key component in determining that double-counting would not occur. If that is the case, could the Commission then achieve the same result (avoid double-counting) by simply removing either the annual distributed renewable energy requirement under A.A.C. R14-2-1805, or eliminating the use of RECs as compliance measure, given the Green-e certification program standard?

RESPONSE:

Removing the A.A.C. R14-2-1805 requirement would avoid double counting by weakening the REST. Eliminating the use of RECs as a compliance measure would not eliminate the risk of double counting (see response to question 21).

29. Please explain how the RUCO "baseline" proposal avoids double counting under CRS's Green-e certification program if the utilities imply each year that the annual distributed renewable energy requirement is being met through distributed energy market self-sufficiency.

RESPONSE:

If the utilities imply that they are meeting an unmodified annual distributed renewable energy requirement, and they have not procured those RECs, then it would constitute a claim on the REC, and could result in double counting.

30. If the annual distributed renewable energy requirement (the "DE Carveout") requirement under A.A.C. R14-2-1805 were abolished and Commission Utilities Division Staff merely compiled data on distributed renewable generation kWh production from facilities, would this constitute a situation where a claim was being made on the REC? Please explain fully why or why not.

RESPONSE:

If the Commission weakens the REST by abolishing the annual distributed energy requirement, and data compiled on distributed energy was used for informational purposes, then this would not create a claim on the RECs from such facilities.

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The reason is that the Commission is making a policy decision to remove a requirement, so utilities complying with the remaining REST requirements would not be making any claim to meeting the DE carveout.

- 31. Do Ms. Martin and CRS believe that the DE Carveout should be maintained? If so, please explain why CRS believes that to be preferable.**

RESPONSE:

CRS is not supportive of any program that results in double counting. CRS is generally supportive of maintaining and strengthening state RPS requirements. But, the scope of my testimony is limited to questions of double counting between the REST and voluntary markets.

- 32. Ms. Martin indicates on page 25 at lines 22 through 23 that "[the] design of the waiver is important in determining whether or not double counting could arise." How would Ms. Martin structure a waiver so that the double-counting dilemma is avoided?**

RESPONSE:

Referencing page 15 of the testimony, the waiver would need to explicitly state that the utilities are not in compliance with the DE carveout section of the REST and that no renewable energy for which RECs were not procured was used to meet compliance. Utilities would also need to be instructed by the Commission to not represent that they have complied with that portion of the REST.

- 33. Please indicate whether Ms. Martin agrees that the following were goals of the Arizona REST Rules:**

- a. Reducing reliance on fossil fuels.
- b. Reduce air pollution and the associated external costs.
- c. A diverse fuel supply
- d. To improve reliability within load pockets.

RESPONSE:

This question is beyond the scope of the testimony. I do not have sufficient basis to agree or disagree.

**RESPONSE OF MS. MARTIN, CENTER FOR RESOURCE SOLUTIONS, TO
TUCSON ELECTRIC POWER COMPANY AND UNS ELECTRIC, INC.'S
FIRST SET OF DATA REQUESTS TO THE
RESIDENTIAL UTILITY CONSUMER OFFICE
Docket Nos. E-01345A-10-0394; E-01345A-12-0290;
E-01933A-12-0296; E-04204A-12-0297 (CONSOLIDATED)
JUNE 20, 2013**

34. In light of Ms. Martin's responses to DR 38 above, please indicate whether electricity where the renewable attributes are aggregated separately into RECs still meets the following goals:

- a. Reducing reliance on fossil fuels.**
- b. Reducing air pollution and the associated external costs**
- c. A diverse fuel supply**
- d. To improve reliability within load pockets.**

RESPONSE:

See response to data request 33.

35. Please state whether Ms. Martin believes that null electricity could be used to (1) meet the goals of the Arizona REST rules; and (2) preserve the integrity of the RECs under CRS's Green-e Certification National Standard. Please explain fully why or why not.

RESPONSE:

My understanding of the REST rules is that REC ownership is needed to meet compliance, not ownership of null electricity. Please see the response to DR 21 regarding null electricity.

36. Please confirm that your testimony regarding double-counting addresses how the various proposals put forth by the parties relates to or impacts CRS's Green-e Energy certification program.

RESPONSE:

My testimony regarding double-counting presents principles and examples of how certain proposals or actions could impact the ability of Arizona citizens and organizations to participate in renewable energy markets, and specifically the Green-e Energy certification program.

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TESTIMONY OF GREGORY L. BERNOSKY

On Behalf of Arizona Public Service Company

**Docket Nos. E-01345A-10-0394; E-01345A-12-0290;
E-01933A-12-0296; E-04204A-12-0297**

March 29, 2013



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1 **TESTIMONY OF GREGORY L. BERNOSKY**
2 **ON BEHALF OF ARIZONA PUBLIC SERVICE COMPANY**
3 **(Docket Nos. E-01345A-10-0394; E-01345A-12-0290;**
 E-01933A-12-0296; E-04204A-12-0297)

4 **I. INTRODUCTION**

5 **Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.**

6 A. My name is Greg Bernosky. I am Arizona Public Service Company's (APS or
7 Company) Manager of Renewable Energy and my address is 400 North 5th
8 Street, Phoenix, Arizona, 85004.

9 **Q. WHAT IS YOUR EDUCATIONAL AND PROFESSIONAL**
10 **BACKGROUND?**

11 A. I graduated from the University of Illinois in 1998. I began employment with
12 APS in 2007 and primarily focused my efforts on transmission line and facility
13 siting. I began working in the renewable energy area in 2010, and I became the
14 Manager of Renewable Energy in 2012.

15 **Q. WHAT ARE YOUR RESPONSIBILITIES AT APS?**

16 A. I am responsible for developing, seeking regulatory approval for and
17 administering APS's renewable energy program.

18 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

19 A. My testimony answers the question of whether APS should be allowed, in the
20 absence of paying direct cash incentives, to use a "Track and Record" means of
21 securing compliance with its distributed energy (DE) requirements under the
22 Renewable Energy Standard (RES) rules.

23
24 **II. SUMMARY**

25 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

26 A. Coming out of its 2012 REST plan, APS was ordered to address how it would
27 comply with the RES rules if direct cash incentives were no longer available and
28

1 it no longer received Renewable Energy Credits (RECs) from customers. APS's
2 proposal was to simply track all energy produced by DE systems installed on
3 APS's system and count that energy for purposes of compliance. Several
4 intervenors, however, objected to this proposal because rules such as those
5 established by the Center for Resource Solutions consider RECs to be retired if
6 the energy associated with those RECs is used to establish compliance with the
7 RES. To satisfy this concern, the Track and Record proposal described in this
8 testimony addresses DE compliance obligations while permitting customers to
9 retain RECs.

10
11 APS is now in the position where DE incentives are no longer necessary for APS
12 to achieve compliance with the RES rules over the next several years. Because of
13 this, APS expects that the payment of direct cash incentives for installing DE will
14 be eliminated in the near future. Historically, APS has provided direct cash
15 incentives, among others, to customers installing a DE resource in exchange for
16 the RECs that the resource would create. When direct cash incentives come to an
17 end, APS proposes that the Commission implement a Track and Record policy
18 that would no longer require APS (and other Affected Utilities, as appropriate) to
19 obtain RECs from DE sources as contemplated in A.A.C. R14-2-1805. Customers
20 installing DE would keep their RECs. Because DE activity is still of interest to
21 the Commission and Affected Utilities, however, APS proposes to track the
22 energy produced by DE installations through the continued deployment of DE
23 production meters and annually report the amount of that energy to the
24 Commission for informational purposes, rather than for compliance purposes.
25 There would no longer be a requirement that Affected Utilities acquire a
26 particular amount of RECs from DE. This proposal should be implemented, and
27
28

1 Affected Utilities should be permitted to Track and Record DE in this manner, for
2 two primary reasons.

3
4 First, APS's proposal is a simple compromise between the need for APS to
5 address compliance with DE requirements and the desire of some customers to
6 retain RECs. Second, APS's proposal would create an opportunity to save costs
7 for customers. With the current DE "carve-out," APS may need to acquire new
8 DE RECs in 2016 to satisfy the residential DE requirement. The elimination of
9 cash incentives would potentially require APS to obtain these RECs through a
10 different transaction with customers.

11
12 With no DE RECs coming to the utility, APS believes it is appropriate to
13 eliminate the DE "carve-out" and transition from acquiring DE to meet arbitrary
14 benchmarks in the RES rules to a focus on acquiring renewable energy in the
15 context of a broader resource plan. Quite simply, if the Commission removes the
16 requirement for APS to acquire additional technology-specific (e.g., DE) RECs,
17 APS can continue its commitment to renewable energy by addressing resource
18 planning needs in a manner that leverages decreasing market prices and obtains
19 the lowest cost for all APS customers.

20 21 **III. BACKGROUND REGARDING INCENTIVES AND RECs**

22 **Q. PLEASE DESCRIBE THE RENEWABLE ENERGY AND DE** 23 **REQUIREMENTS WITH WHICH APS MUST COMPLY.**

24 A. In November 2006, the Commission adopted new Renewable Energy Standard
25 and Tariff rules.¹ These RES rules require Affected Utilities² (of which APS is

26 ¹ See Decision No. 69127.

27 ² Affected Utilities are public service corporations serving retail electric load in Arizona, except for
28 those Utility Distribution Companies with more than half of their customers located outside of Arizona.
A.A.C. R14-2-1801(A).

1 one) to, among other items, use renewable energy to serve increasing portions of
2 their retail load. By the end of 2013, the RES rules require APS to serve 4% of its
3 retail load with renewable energy; by 2015 that percentage increases to 5%; by
4 2025 and for all subsequent years, 15% of APS's retail load must be served by
5 renewable energy.³

6
7 In addition, the RES rules impose a DE carve-out requirement. The DE carve-out
8 requires that for all years after 2011, 30% of Affected Utilities' renewable energy
9 requirements must be supplied by DE.⁴ In other words, by 2025, 4.5% of APS's
10 retail load (30% of 15%) must be served from DE. Half of APS's DE requirement
11 must come from residential applications and the other half from non-residential,
12 non-utility applications.⁵

13
14 **Q. WHAT ARE RECs?**

15 **A.** Before the RES rules, RECs did not exist in Arizona. Arizona RECs exist solely
16 through the RES rules, and were created as a means for Affected Utilities to
17 demonstrate compliance with the RES rules. The RES rules provide that for each
18 kWh, a single REC is created, and that the owner of the renewable generating
19 resource creating that kWh also owns the resulting REC.⁶ The RES rules provide
20 that an Affected Utility may transfer RECs to, or acquire RECs from, another
21 party; the RES rules do not, however, identify any other permissible transfers of
22 ownership.⁷ RECs are "bundled" with energy; any transfer of RECs must also
23 transfer the energy associated with those RECs.⁸

24
25 ³ See A.A.C. R14-2-1804.

26 ⁴ A.A.C. R14-2-1805(B).

27 ⁵ A.A.C. R14-2-1805(C).

28 ⁶ A.A.C. R14-2-1803. The rules also provide that non-photovoltaic DE resources can create one REC for each 3.415 British Thermal Units produced. See A.A.C. R14-2-1803(B).

⁷ A.A.C. R14-2-1803(C).

⁸ A.A.C. R14-2-1803.

1 **Q. WHAT PURPOSE DO RECs SERVE?**

2 RECs exist solely as a mechanism for Affected Utilities to establish compliance
3 with the RES standard. To establish compliance, an Affected Utility must (i)
4 acquire the REC in question from the owner of the Eligible Renewable Energy
5 Resource; and (ii) "retire" that REC.⁹

6
7 **Q. FOCUSING ON RECs ASSOCIATED WITH DE, HOW DOES APS**
8 **ACQUIRE RECs FROM OWNERS OF ELIGIBLE RENEWABLE**
9 **ENERGY RESOURCES?**

10 A. To acquire RECs associated with DE, APS enters into an agreement with the
11 customer owning the DE system in question. Pursuant to that agreement, APS
12 pays the customer a direct cash incentive. In exchange, the customer transfers to
13 APS all RECs associated with the energy created by the DE system for a 15 or 20
14 year term, depending on the type of contract signed. The Commission sets the
15 incentive amount provided by APS. That amount has decreased over time as a
16 result of various factors, including market activity and APS's compliance needs.

17 **Q. PLEASE DESCRIBE THE HISTORY OF APS'S DIRECT CASH**
18 **INCENTIVES AND THE STATUS OF APS'S COMPLIANCE WITH ITS**
19 **DE REQUIREMENTS.**

20 A. Upfront cash incentives for residential DE have decreased from a high of \$4/watt
21 in 2006 to \$0.10/watt today. As the direct cash incentive amount has decreased,
22 the number of DE installations has increased. In 2012 alone, customers installed
23 105 MWdc of DE in APS's service territory, resulting in more than 273 MWdc
24 total. Accounting for only existing DE installations and commitments, APS will
25 meet residential DE carve-out requirements through 2015 and non-residential DE
26 carve-out requirements through 2019.

27 **IV. APS's TRACK AND RECORD SOLUTION**

28 ⁹ A.A.C. R14-2-1804.

1 **Q. WHY IS APS PROPOSING TRACK AND RECORD?**

2 A. APS cannot comply with the RES rules as currently written if APS is not
3 providing a cash incentive to customers installing a DE system in exchange for
4 RECs tied to that DE system. Thus, APS proposes Track and Record as a simple
5 and cost-effective means to address APS's compliance obligations under the RES
6 rules.

7 **Q. PLEASE DESCRIBE APS'S PROPOSAL FOR ADDRESSING DE**
8 **COMPLIANCE REQUIREMENTS WITHOUT INCENTIVES.**

9 A. To address DE compliance and permit customers to keep RECs, APS proposes
10 that Affected Utilities no longer have a firm DE requirement. This would involve
11 ending the requirement in A.A.C. R14-2-1805 that APS satisfy 30% of its total
12 RES requirement through DE. Instead of acquiring (and subsequently retiring)
13 RECs from newly installed DE systems, APS would simply track the amount of
14 incremental energy produced by those systems in its service territory and report
15 that information to the Commission. This reporting would be for information
16 purposes only—not compliance purposes. Under its proposal, APS would be able
17 to retire any DE RECs currently in its possession to satisfy APS's RES
18 obligations found in A.A.C. R14-2-1804. APS could also acquire new DE RECs
19 to satisfy those obligations, but would have no further obligation to obtain and
20 retire new DE RECs as specified in A.A.C. R14-2-1805.

21 **Q. WOULD APS'S PROPOSAL INVOLVE A CHANGE TO OR WAIVER OF**
22 **THE RES RULES?**

23 A. APS's proposal involves initially waiving compliance with the DE carve-out.
24 When direct cash incentives are eliminated, a solution regarding DE compliance
25 and RECs will be needed in the short term, and a waiver can be implemented
26 before a formal change to the RES rules. But in the long term, transitioning the
27 implementation of Track and Record from a waiver to a narrow rule change
28 offers certain advantages. A waiver can subsequently be revoked. If the DE

1 waiver were revoked, APS could be required to obtain sufficient DE RECs to
2 meet the 30% requirement in a condensed timeframe, causing uncertain costs and
3 impacts. Moreover, if APS only secured a waiver of the DE carve-out, APS
4 would never be adequately certain of its DE requirements in connection with,
5 among other items, resource planning and APS's long term RES program
6 commitments. Accordingly, APS proposes implementing Track and Record
7 through a waiver in the short term. In the long term, APS proposes a narrow rule
8 change, and will include specific rule changes in its rebuttal testimony.
9

10 **Q. UNDER APS'S PROPOSAL, WOULD CUSTOMERS INSTALLING NEW**
11 **DE SYSTEMS BE ABLE TO KEEP THEIR RECs?**

12 A. Yes. If APS had no separate requirement to retire a certain amount of RECs from
13 DE sources, APS would not need to acquire DE RECs from its customers. APS
14 would only track incremental DE energy produced and report that production
15 each year for informational purposes only.

16 **Q. WOULD APS PAY DIRECT CASH INCENTIVES TO CUSTOMERS**
17 **INSTALLING AND OPERATING NEW DE SYSTEMS?**

18 A. No. APS would no longer need the DE RECs that customers provide in exchange
19 for direct cash incentives to comply with the RES.

20 **Q. WOULD APS NEED RECs TO ESTABLISH COMPLIANCE WITH DE**
21 **REQUIREMENTS?**

22 A. No. Under APS's proposal, APS would have no separate requirement to retire
23 RECs derived from DE.

24 **Q. WOULD APS STILL NEED TO MEET THE OVERALL 15% STANDARD**
25 **STATED IN THE RES RULES?**

26 A. Yes. APS's obligation to serve 15% of its retail load with energy produced by
27 Eligible Renewable Energy Resources stems from A.A.C. R14-2-1804. APS's
28 proposal only addresses the separate requirements found in and derived from
A.A.C. R14-2-1805.

1 ...
2 ...
3
4 **Q. HOW WOULD CUSTOMERS BENEFIT?**

5 A. Customers would benefit from APS's proposal because the proposal would (i)
6 permit customers to keep RECs produced by their DE systems; and (ii) create the
7 opportunity for lower overall costs to customers.

8 **Q. IF INCENTIVES ARE PAID TO CUSTOMERS INSTALLING DE, WOULD RECs BE ACQUIRED FROM THOSE CUSTOMERS?**

9 A. Yes. Under APS's proposal, the DE carve-out would no longer exist.
10 Nonetheless, if the Commission concludes that as a policy matter, some form of
11 DE incentives exist—whether as a direct cash payment or otherwise—APS would
12 seek to acquire RECs in exchange for any incentive paid in fairness to all APS
13 customers who fund the incentive.

14
15 **Q. IS THIS TRACK AND RECORD PROPOSAL DIFFERENT FROM THE ONE PROPOSED IN APS's 2013 RES PLAN FILED ON JULY 1, 2012?**

16 A. Yes. In its 2013 RES Plan, APS was ordered to address how it would comply
17 with the RES rules if it no longer received RECs from customers. APS's proposal
18 was to simply track all energy produced by DE systems installed on APS's
19 system and count that energy for purposes of compliance. Several intervenors,
20 however, objected to this proposal because rules such as those established by the
21 Center for Resource Solutions consider RECs to be retired if the energy
22 associated with those RECs is used to establish compliance with the RES. To
23 satisfy this concern, the Track and Record proposal described in this testimony
24 addresses DE compliance obligations while permitting customers to retain RECs.

25 **Q. IS APS SEEKING TO "SLOW" THE DE MARKET WITH ITS PROPOSAL?**
26
27
28

1 A. Absolutely not. APS was ordered to address DE compliance should customers no
2 longer provide RECs in exchange for direct cash incentives. APS's proposal is
3 not designed to reduce DE growth, or otherwise prevent customers from
4 installing DE. In fact, a fundamental premise of APS's proposal is to focus on
5 acquiring renewable energy to satisfy resource needs in the context of an overall
6 resource plan, rather than installing DE to satisfy arbitrary benchmarks that exist
7 independent of any resource need.

8
9 **Q. WHAT ALTERNATIVES DID APS CONSIDER?**

10 A. APS considered multiple possible solutions to address DE compliance in the
11 absence of direct cash incentives. One solution involved keeping APS's DE
12 requirements and simply requiring that customers surrender their RECs in
13 exchange for interconnecting to APS's system. Although this solution maximizes
14 the amount of DE RECs APS could possibly receive, a potential drawback is that
15 it would maintain the arbitrary DE benchmarks and not shift the focus to
16 acquiring renewable energy in the context of a broader resource plan. In addition,
17 this solution would preclude customers from retaining their RECs should they
18 desire. APS's proposal, on the other hand, would permit customers to keep their
19 RECs.

20
21 Another solution that APS considered involved eliminating the DE requirement
22 from the RES rule in a manner that would have reduced the overall RES
23 obligation by the amount of the DE carve-out. Under this alternative, APS's
24 overall RES obligation would be reduced by 30% after 2011; by 2025, APS
25 would only need to serve 10.5% of its retail load from Eligible Renewable
26 Resources, which would have cost implications for customers. Under this
27 alternative, APS would shift its decisions regarding the procurement of additional
28 renewable energy and capacity into the context of its overall resource needs; APS

1 would only acquire additional renewable energy as needed for planning and
2 reliability purposes, rather than to satisfy a separate RES obligation. Although
3 this option would result in lower costs for customers, APS's proposal maintains
4 as much of the current RES rules as possible while removing technology-specific
5 targets; this will allow APS to capture a significant amount of cost savings by
6 permitting APS to acquire renewable energy in the overall resource planning
7 context.
8

9 **V. CONCLUSION**

10 **Q. DO YOU HAVE ANY CONCLUDING REMARKS?**

11 **A.** Under the Commission's stewardship, APS and its customers have developed a
12 significant amount of renewable energy. Declining market prices and blends of
13 technology and ownership models have made renewable energy an integral part
14 of APS's overall resource planning. The issue that the Commission, APS and
15 Arizona must address is how to best move forward from here. APS submits that
16 the best approach to the answer of how DE RECs should be acquired when direct
17 cash incentives are eliminated is to simply not require DE RECs to be part of the
18 APS or any Affected Utilities' portfolio. In this way, the Commission can
19 recognize the importance of renewable energy, but balance the acquisition of new
20 renewable energy with the associated costs and resource planning needs. The
21 proposal described in this testimony seeks to achieve that balance. Affected
22 Utilities should be permitted to use the Track and Record mechanism described in
23 this testimony to simply and cost-effectively begin the discussion on transitioning
24 the acquisition of renewable energy under the RES to acquiring renewable energy
25 in relation to APS's resources needs within the context of an overall resource
26 plan.
27
28

**DIRECT TESTIMONY OF RICK GILLIAM
ON BEHALF OF THE VOTE SOLAR INITIATIVE**

**Docket No. E-013458-10-0394
Docket No. E-01345A-12-0290
Docket No. E-OI933A-12-0296
Docket No. E-04204A-12-0297**

April 24, 2013

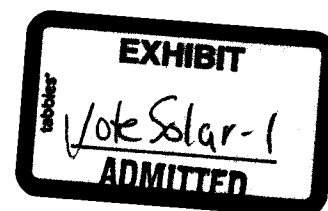


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Direct Testimony of Rick Gilliam The Vote Solar Initiative

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**DIRECT TESTIMONY OF
RICK GILLIAM**

1 **Introduction and Overview**

2 **Q. Please state your name and business address.**

3 A. My name is Rick Gilliam. My business address is 1120 Pearl Street, Suite 200 in
4 Boulder, Colorado.

5
6 **Q. On whose behalf are you submitting this rebuttal testimony?**

7 A. This testimony is submitted on behalf of The Vote Solar Initiative ("Vote Solar").
8

9 **Q. By whom are you employed and in what capacity?**

10 A. I serve as Director of Research and Analysis for Vote Solar, and oversee policy
11 initiatives, development, and implementation.

12
13 Vote Solar is a non-profit grassroots organization working to foster economic
14 opportunity, promote energy independence and fight climate change by making
15 solar a mainstream energy resource across the United States. Since 2002 Vote
16 Solar has engaged in state, local and federal advocacy campaigns to remove
17 regulatory barriers and implement key policies needed to bring solar to
18 scale. We have nearly 2,500 Arizona members.

19
20 **Q. Please describe your experience in utility regulatory matters.**

1 A. Prior to joining Vote Solar in January of 2012, my regulatory experience included
2 five years in the Government Affairs group at Sun Edison, one of the world's
3 largest solar developers, twelve years at Public Service Company of Colorado as
4 Director of Revenue Requirements and twelve years with Western Resource
5 Advocates (WRA – formerly known as the Land and Water Fund of the Rockies)
6 as Senior Policy Advisor. Prior to that, I spent six years with the Federal Energy
7 Regulatory Commission. All told, I have in excess of 30 years of experience in
8 utility regulatory matters. A summary of my background is attached as Appendix
9 A.

10

11 **Q. Have you previously testified before the Arizona Corporation Commission**
12 **(“ACC” or “Commission”)?**

13 A. Yes. I testified before this Commission on behalf of Vote Solar in the recent
14 Tucson Electric Power Rate Case, and on behalf of the LAW Fund in some of the
15 early proceedings regarding the development of a renewable standard. I have
16 also participated in a number of rulemakings in the intervening period.

17

18 **Q. Before what other utility regulatory commissions have you testified?**

19 A. I have testified in proceedings before the Public Utilities Commission of
20 Colorado, Nevada Public Utilities Commission, the New Mexico Public
21 Regulation Commission, the Utah Public Service Commission, the Wyoming
22 Public Service Commission and the Federal Energy Regulatory Commission.

23

24 **Q. What is the purpose of your testimony?**

1 A. The purpose of my testimony is to respond to the direct testimony of APS
2 witness Greg Bernosky and TEP witness Carmine Tilghman regarding the
3 Companies' proposals to waive and then eliminate the distributed energy
4 component of the Renewable Energy Standard, and to propose an alternative
5 means of renewable energy credit ("REC") acquisition for compliance purposes.
6

7 **Q. Please summarize your testimony.**

8 A. This proceeding is very important in the evolution of the electric utility industry in
9 Arizona. The major utilities are part way through the growing renewable energy
10 compliance requirements, and certain technologies, notably photovoltaics or PV,
11 are approaching an economic junction where direct financial incentives may be
12 no longer needed to encourage homeowners and businesses to install solar
13 generation on-site. Unfortunately, it is not a bright line.
14

15 As in most states with a customer-sited component in its renewable energy
16 standard, utility compliance has been proven by the acquisition and retirement of
17 sufficient RECs associated with customer-sited renewable electricity generation.
18 Such RECs are acquired in exchange for incentive payments. If the economics
19 of customer-sited solar deployment reach a point where retail customers are
20 willing to install solar on their homes and businesses without financial incentives¹
21 from their utility, how can the utility acquire the RECs necessary to prove it is in
22 compliance?

¹ It should be noted that some customers have already requested net metering service without receiving a utility incentive; see TEP witness Tilghman direct testimony, pages 4-5.

1
2 The utilities' answer is to waive the requirement in the near term, and eliminate it
3 in the medium term. This approach solves the compliance problem by having
4 nothing with which to comply, however it defeats the purpose of the renewable
5 energy standard. Vote Solar's proposal is to leave intact the standard including
6 A.A.C. R14-2-1805, the Distributed Renewable Energy Requirement, and find the
7 lowest cost method for acquiring the credits needed for compliance.
8

9 **Q. Please characterize Vote Solar's interest in this proceeding.**

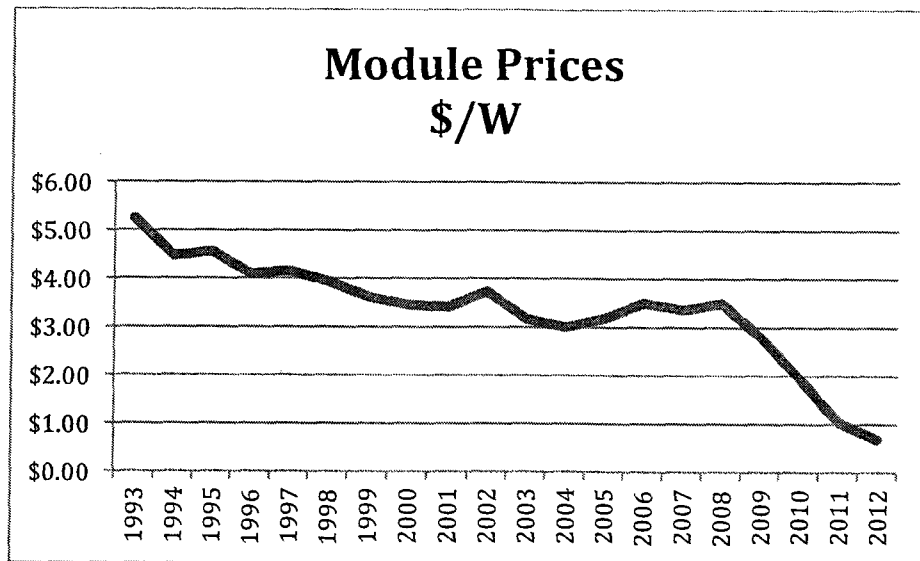
10 A. Vote Solar is interested in this proceeding because we view Arizona as one of
11 the first major solar markets in which solar electricity prices are approaching the
12 price of grid-supplied electricity. Continuation of current trends could lead to a
13 point where incentives are no longer needed, all else being equal. These parity
14 economics are highly dependent on a number of factors, not the least of which is
15 the outcome of the APS technical conference process addressing net metering.
16 This docket will address a number of proposals for supporting continuation of a
17 strong stand-alone solar market. It is these trends and changes and the
18 associated debate that interest Vote Solar.
19

20 **Background**

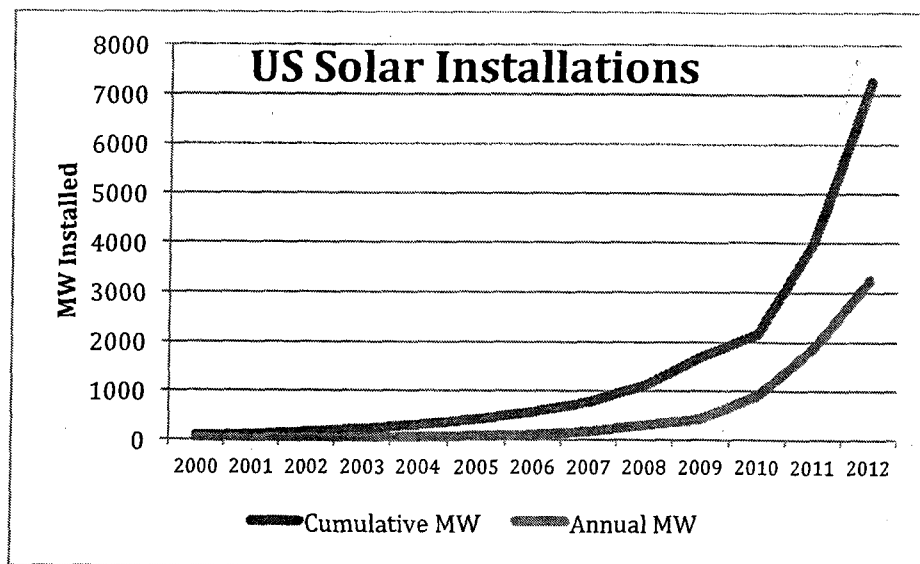
21 **Q. How did the need for this proceeding come about?**

22 A. This proceeding is a reflection of the success of the solar industry. The cost of
23 solar has come down dramatically since the Renewable Energy Standard and

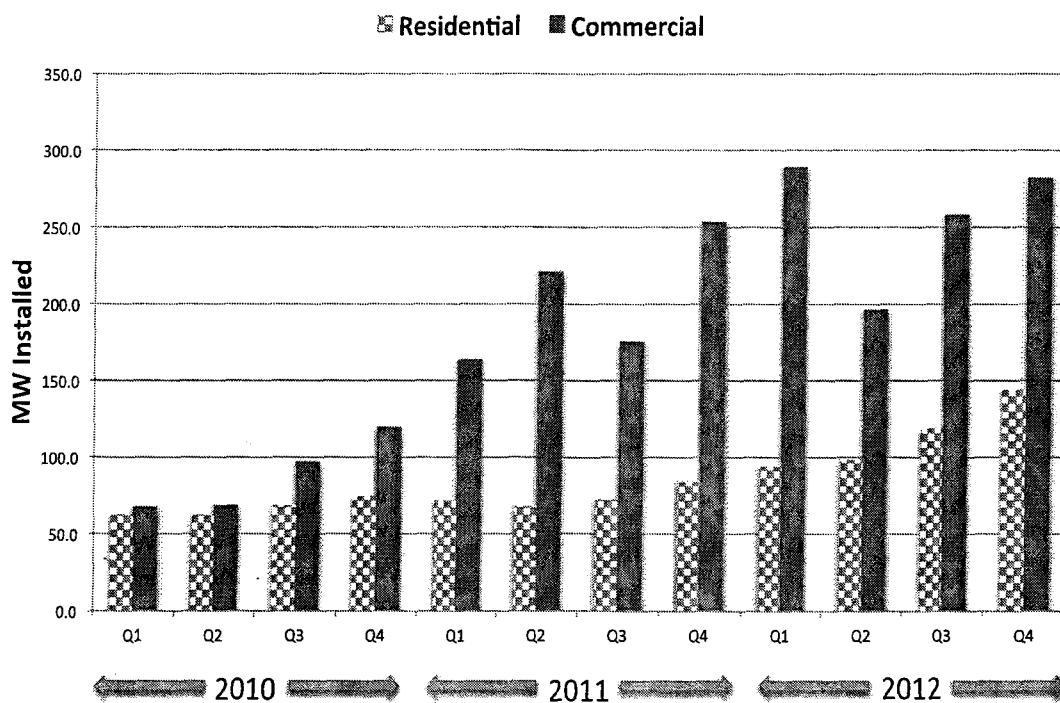
1 Tariff (REST) was implemented in 2006. The following chart shows the cost of
2 solar modules on a $\$/W_{DC}$ basis over the past 20 years.



3
4 As a result of these steep cost declines, driven in large part by increased
5 demand and resulting growth in manufacturing, and the associated economies of
6 scale and efficiencies, deployment of solar energy resources, especially PV, has
7 grown nearly as dramatically – averaging over 75%/year for the last five years.



The growth has occurred across the spectrum of market segments – utility scale, commercial on-site, and residential on-site. As the latter two categories are of interest in this proceeding, the following chart² shows the deployment by major market segment over the last few years across the United States.

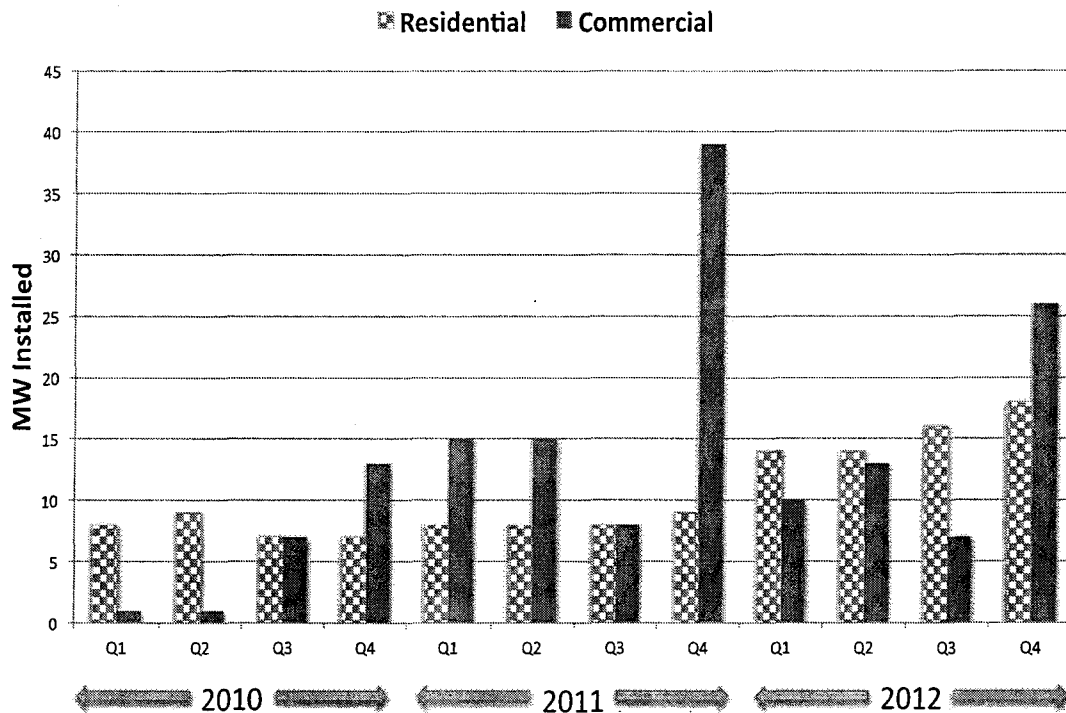


Q. How have Arizona's markets grown?

A. Arizona has been a leading state for solar development in no small part because of the vast amount of sunshine that the state enjoys. In 2012, Arizona moved into second place behind only California for the most MWs installed both for the year and cumulatively, and leads the nation with the highest solar capacity per capita. While the 2012 growth was in large part due to utility scale solar coming

² Source: SEIA/GTM Research, U.S. Solar Market Insight

on line, the customer-sited market performed very well, too, as the following chart³ demonstrates:



Q. Has the Arizona solar market created significant jobs?

A. Yes. According to a recent report from The Solar Foundation,⁴ there are nearly 10,000 solar jobs in the state - the highest level in the nation per capita. One of every 300 working people in Arizona work in the solar industry.

Q. Has the REST played a role in this growth?

A. Yes. The REST has played a very important role in diversifying the generation resources for the ACC-jurisdictional utilities, not just to renewably generated electricity in large centralized plants, but also through the Distributed Renewable

³ Ibid.

⁴ Source: <http://thesolarfoundation.org/solarstates>

1 Energy Requirement (Section 1805) that promoted small systems on homes and
2 businesses. For the first time, electricity consumers at all levels had a choice for
3 their source of electricity. Not only was customer choice now a reality, but in the
4 process jobs were created and the money spent on energy stayed in Arizona
5 rather than going to out-of-state coal and natural gas producers, further helping
6 to boost the state's economy.

7
8 As noted above, compliance with Section 1805 was demonstrated by acquiring
9 Renewable Energy Credits or RECs from the owners of customer-sited solar
10 generating systems in exchange for payments from the utility.

11 12 **Renewable Energy Credits and REST Compliance**

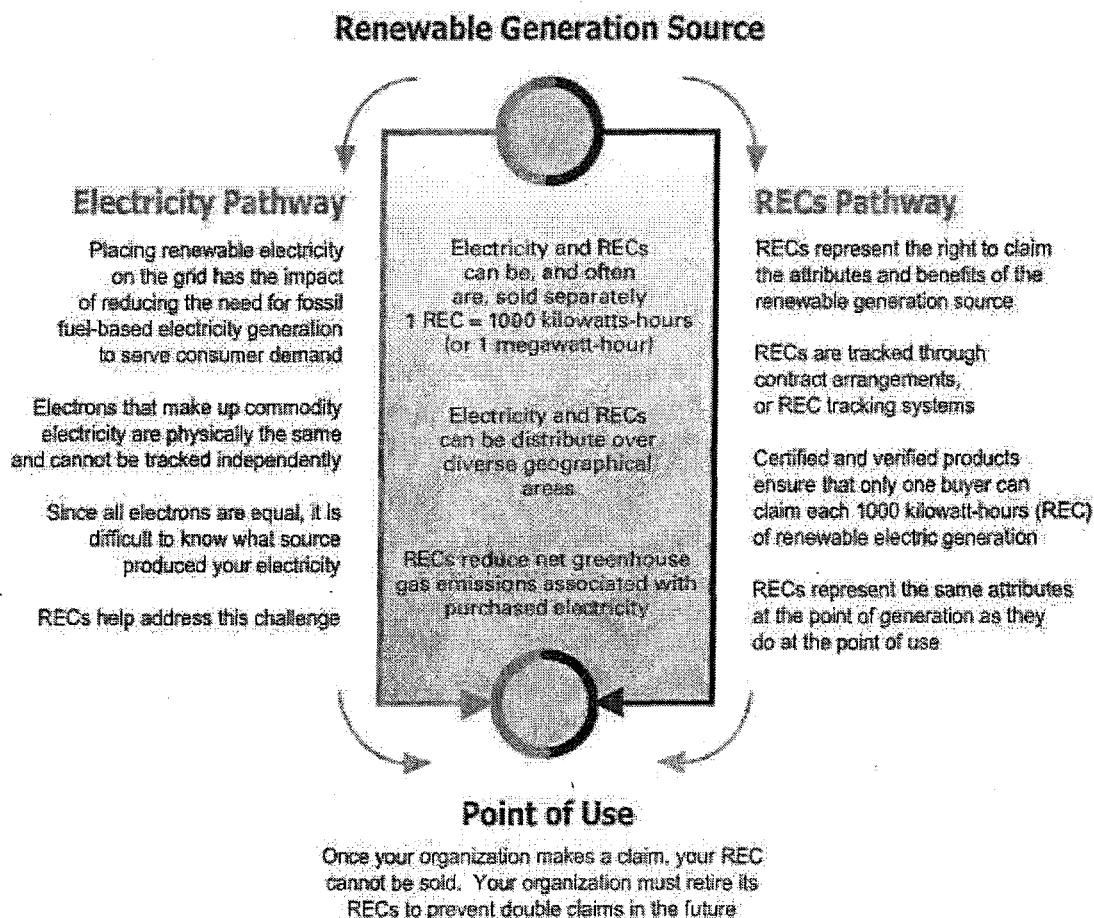
13 **Q. What is a Renewable Energy Credit or REC?**

14 A. The REST defines Renewable Energy Credit (sometimes known as a Renewable
15 Energy *Certificate*) as "the unit created to track kWh derived from an Eligible
16 Renewable Energy Resource or kWh equivalent of Conventional Energy
17 Resources displaced by Distributed Renewable Energy Resources." More
18 commonly, RECs are defined to include non-energy attributes, "including any and
19 all credits, benefits, emissions reductions, offsets, and allowances, howsoever
20 entitled, directly attributable to a specific amount of electric energy generated
21 from a renewable energy resource."⁵

22
23 RECs are created whenever a renewable resource generates electricity,

⁵ From the definition of RECs in the Colorado PUC Rules.

regardless of whether the utilities in the state (and territory) in which the project is located have a compliance obligation. The owner of the renewable energy system generally owns the RECs unless contractually transferred to another entity. The following chart⁶ lays this out graphically:



Q. Do RECs have value?

A. Yes. There are two markets for RECs. The first is the compliance market, in which RECs are used by a utility or other energy provider to comply with a state renewable requirement. The second market is a non-compliance (sometimes

⁶ Source: http://www.epa.gov/greenpower/gpmarket/rec_chart.htm

known as voluntary) market in which individuals, businesses or local governments acquire RECs to achieve certain sustainability or climate change goals. There are many companies⁷ operating at the national, regional and state level that acquire and aggregate RECs from individual projects for resale to individuals and organizations. One of the largest, Bonneville Environmental Foundation (BEF), defines RECs as follows:

A **Renewable Energy Certificate**, or REC, is a tradable, legal mechanism that represents the environmental benefits associated with one megawatt-hour of electricity generated from a renewable energy resource. These certificates may be sold and traded and the owner of the REC can legally claim to have purchased renewable energy. RECs incentivize the production of renewable energy by providing a source of revenue to electricity generated from renewable sources.

Q. Why would individuals, businesses or other organizations purchase RECs?

A. BEF notes the rationale for businesses to purchase RECs includes:

- To offset the carbon emissions associated with their electricity use
- To choose renewable power when their local utility does not offer a green power option
- To consolidate procurement of renewable energy for multiple locations instead of buying renewable electricity from multiple suppliers
- To offset electricity used for special events, such as conferences, when a direct purchase is not possible

To my knowledge, no one in this proceeding disputes that RECs have value outside of the Arizona compliance market.

Q. In the non-compliance market, how can purchasers be assured they are receiving the values they are purchasing?

⁷ See http://www.green-e.org/base/re_products#res

1 A. The RECs in voluntary markets are usually certified. The leading independent
2 certification organization is the Center for Resource Solutions which administers
3 the Green-e program. This program has been around since 1997 and certifies
4 and verifies over two-thirds of the RECs in the voluntary markets. In 2011 Green-
5 e Energy certified more than 27 million MWh that was sold to over 713,000 retail
6 customers. Based on the most recently available National Renewable Energy
7 Laboratory data, Green-e Energy certified sales are estimated to make up over
8 99% of all retail REC sales in the U.S. and roughly two thirds of the retail
9 renewable electricity sales in the U.S.⁸

10
11 **Q. Would you say that the REST has “run its course?”**

12 A. Not at all. The REST was implemented in 2006 and was designed to increase
13 the diversity of resources on the utilities' grids through 2025, and maintain those
14 minimum levels of renewables beyond. We are less than halfway through the
15 growth period of this policy and, importantly, it has been working as intended.
16 The major utilities have been able to meet their targets ahead of schedule in
17 some cases. For example, APS and TEP have acquired sufficient Renewable
18 Energy Credits (RECs) to meet the non-residential portion of the Section 1805
19 standard to nearly 2020. It is partly on this basis that the Commission eliminated
20 incentives for non-residential solar installations. Notwithstanding this
21 development, the utilities are still required to comply with the REST.

22

⁸ <http://www.green-e.org/docs/2011%20Green-e%20Verification%20Report.pdf>

1 **Q. Is this an appropriate time for the Commission to address the Distributed**
2 **Renewable Energy Requirement?**

3 A. In my view, it is premature. For example, we don't know how, if at all, other
4 important clean energy policies such as net metering may change in the near
5 future. Such changes have the potential to dramatically affect the economics of
6 customer-sited solar, which in turn can impact its future rate of deployment and
7 incentive levels.

8
9 **The Utility Proposals**

10 **Q. Can you summarize how APS and TEP propose to comply with the DE**
11 **standard when incentives are no longer available to use to acquire RECs**
12 **for compliance?**

13 A. Yes. APS proposes to "no longer have a firm DE requirement" but create a
14 "track and record" process in which APS measures the incremental energy
15 produced by eligible distributed renewable energy systems and reports it to the
16 Commission for informational, but not compliance, purposes. It believes this
17 method solves the problem of generation owners retaining ownership of the
18 RECs created by their renewable generation. Mechanically, it proposes a waiver
19 of the rules initially when cash incentives are eliminated, and over the longer
20 term a change to the rules.

21
22 TEP proposes to simply eliminate the requirement as currently designed. It feels
23 the standard is based on customer behavior and that, without incentives, the
24 utility does not participate in the decision making process. It does go on to

1 suggest an interim solution is necessary until the Commission carries out its
2 suggestion. In this regard, it proposes a waiver of the Distributed Renewable
3 Energy Requirement.
4

5 **Q. Does the APS track and record proposal avoid the double counting of**
6 **customer's solar generation?**

7 A. I think it is very unclear whether the new APS track and record proposal truly has
8 no impact on the value of customer-owned RECs. Anytime kWh are used to
9 track compliance with the RES, the utilities are benefitting from RECs they do not
10 own. RECs cannot retain their value in the voluntary market if their underlying
11 kWh are being used for compliance purposes. If there is any uncertainty around
12 that question, REC aggregators are likely to look elsewhere. Organizations like
13 the Center for Resource Solutions are the national experts in this field and should
14 be consulted before any new policy is adopted.
15

16 **Q. Do the utilities make any other suggestions?**

17 A. Yes. APS alludes to "some form of DE incentives" that may exist "as a policy
18 matter" separate from direct cash incentives. It's unclear whether APS may be
19 referring to net metering, interconnection, or some other policy matter, thus it is
20 difficult to respond. On the other hand, TEP is quite direct in its alternative
21 proposal that RECs be transferred to the utility in exchange "for the benefits
22 associated with net metering."
23

1 We disagree with these suggestions for a number of reasons. First, no Arizona
2 utility has proven any net cost exists associated with net metering. Moreover, the
3 Commission has not ruled on the issue.

4
5 Second, APS is facilitating a series of technical conferences right now, in which
6 TEP, SRP, staff, RUCO and many other traditional Commission stakeholders are
7 participating, that is scheduled to continue into the summer. There is a great
8 deal of new data and information coming out of this process and it is extremely
9 premature and inappropriate for the utilities to draw conclusions at this time.

10
11 Third, due to the variety of distributed renewable energy sizes, technologies, and
12 configurations deployed on homes and businesses, and the diversity of electric
13 rates and rate structures, the net benefits and costs associated with net metering
14 will of course vary dramatically, making any broadly applied value assumption
15 incorrect.

16
17 Fourth, TEP options 2 and 3 would likely result in the Utilities claiming RECs they
18 have not paid for nor acquired from the owner through a specific transfer, and
19 don't own. Option 3 is unclear whether it applies to past net-metering
20 agreements or only future net-metering agreements and thereby risks
21 invalidating contracts for REC sales that have already been made. While not
22 directly taking the RECs for compliance, option 3 proposes to use the kWh to
23 "Track and Reduce" the utility's Annual Distributed Renewable Energy
24 Requirement by that amount. This proposal is effectively the same as the APS

1 "Track and Record" and would also leech the value out of the RECs and render
2 them valueless and likely uncertifiable by Green-e Energy.

3
4 **Q. Do you have any other comments on the utility proposals?**

5 A. Yes. There are interdependent elements in the REST that could be impacted by
6 adopting the utility proposal to eliminate Section 1805. For example, there are
7 other technologies besides solar PV such as solar domestic water heating
8 covered by Section 1805 that would be penalized by striking this section.

9
10 **The Vote Solar Proposal**

11 **Q. Does Vote Solar have a proposal to address the zero-incentive issue?**

12 A. Yes. Because RECs have value that could be compromised by the APS track
13 and record proposal, we suggest an administratively simple and low-cost market-
14 based method for continued acquisition of RECs when incentives are zero that
15 maintains the integrity of the REST.

16
17 Given that the major utilities (TEP and APS) appear to have sufficient non-
18 residential RECs to comply with Section 1805 for some time, we propose the
19 issuance of a periodic standard offer for Residential RECs from systems that are
20 installed after the incentives for residential solar are eliminated. Initially, we
21 suggest a quarterly offer for a limited number of RECs to begin to get a feel for
22 the market value. REC owners should also be encouraged to offer RECs at a
23 price lower than the standard offer, which would be acquired first, in order of
24 cost. Over time, the offers and timing can be refined. We suggest the following

1 guidelines:

- 2 • The standard offer should be issued quarterly or semi-annually via a website
3 (with notification through the monthly newsletter included in each bill) and
4 should remain open for a few days or weeks depending on market response;
- 5 • The utilities should set an initial price at a low rate and ratchet up the price, if
6 necessary, to gather sufficient RECs for compliance (at the utility's discretion
7 to pay as-bid or set a market-clearing price)
- 8 • The Standard offer should be open to system owners and third party
9 aggregators who acquire RECs and/or bid them on customer's behalf.

10 This is certainly not a new approach. In fact, utilities and load-serving entities are
11 actively conducting market-based solicitations to obtain RECs in the following
12 states: California, Colorado, Connecticut, Delaware Illinois, Maryland,
13 Massachusetts, New Jersey, New Mexico, New York, Ohio and Pennsylvania.
14 Arizona utilities have used a similar approach in soliciting non-residential solar
15 projects, as well.

16
17 **Q. What are the advantages of this approach?**

18 A. This procurement method is consistent with Arizona law and Commission rules
19 and does not require special consideration, creative work-arounds, obfuscating
20 semantics, rule modifications or on-going waivers. Indeed, it is similar to the
21 method used by the IOUs to acquire commercial solar RECs in the early days of
22 the standard. It uses the market to assure that residential RECs are acquired at
23 the lowest cost while respecting the property rights of solar system owners.
24 Third, it avoids unnecessary complexity, administrative or regulatory burdens and

1 uses a mechanism with which the utilities are quite familiar.

2

3 Finally, it puts Arizona in a leadership position on valuing RECs so that as other
4 state markets reach a similar point in their evolution, Arizona utilities will have a
5 competitive advantage.

6

7 **Q. Can this proposal be implemented immediately?**

8 A. In my view, yes. Any internal administrative work required can occur prior to the
9 elimination of incentives. However, if the utilities feel they need more time, we
10 would support a waiver of the residential portion of Section 1805 for up to one
11 year to prepare.

12

13 **Recommendation**

14 **Q. Please summarize your recommendations in this testimony.**

15 A. I recommend first that the Commission not take any near term action in this
16 proceeding that could result in a loss of value in customer's property, i.e. the
17 RECs that they own.

18

19 Second, I recommend that the Commission not reopen the REST rules at this
20 time, but rather use the time during which incentives for residential solar are still
21 available to investigate the lowest cost options through which utilities could
22 acquire RECs. This will also provide the time necessary for other policies such
23 as net metering to be more thoroughly reviewed in the context of Arizona utilities.
24 This will allow the Commission to make a more reasoned decision based on

1 more information on the economics of residential solar, the cost of mechanisms
2 like track and record, and the cost of alternatives.

3

4 **Q. Does this conclude your direct testimony?**

5 **A.** Yes, it does.

6

Rick Gilliam

January 2012 to Present: Director of Research and Analysis, the Vote Solar Initiative, San Francisco, CA. Manages the technical and policy research for Vote Solar, and engages in state, regional, and national campaigns related to key solar market policies.

January 2007 to January 2012: Vice President, Government Affairs, SunEdison, LLC, Beltsville, MD. Directs and manages policy development and implementation for the Americas at the regulatory and legislative levels. (Promoted from *Managing Director* June '09 and from *Director* Sept '07)

Dec 1994 to Jan 2007: Senior Energy Policy Advisor, Western Resource Advocates (formerly the Land and Water Fund of the Rockies), Boulder, Colorado. Develop innovative clean energy and air quality public policies within the economic and cultural framework unique to this region. Lead environmental advocate in development of Arizona Environmental Portfolio Standard, Nevada Renewable Portfolio Standard implementation rules, Colorado Renewable Energy Standard legislative proposals, and the 2003 Utah Renewable Energy Standard legislative proposal. Principal author of Colorado's Amendment 37 and lead advocate for related PUC rule development.

Jan 1983 to Dec 1994: Director of Revenue Requirements, Public Service Company of Colorado, Denver, Colorado. Primary responsibility for development of formal rate-related filings for this investor-owned utility for electric, gas, and thermal energy service in two states and the FERC. Developed and responded to a variety of proposed mechanisms to encourage the use of energy efficiency technologies, including innovative rate design approaches.

Dec 1976 to Dec 1982: Technical Witness (Engineer), Federal Energy Regulatory Commission, Washington, D.C. Testified as expert witness on behalf of the FERC in wholesale rate filings on technical, accounting, and economic issues related to rate design, pricing, and other issues.

A. Education

Masters, Environmental Policy and Management, University of Denver, Denver, Colorado
Bachelor of Science, Electrical Engineering, Rensselaer Polytechnic Institute, Troy, New York

B. Related Publications

Gilliam and Baker, "Green Power to the People," *Solar Today*, July/August 2006.

Dalton & Gilliam, "Walking on Sunshine: Energy Independence on the Rez," *Orion Afield*, Summer, 2002.

Gilliam, Rick, "Revisiting the Winning of the West," *Bulletin of Science, Technology & Society*, April 2002.

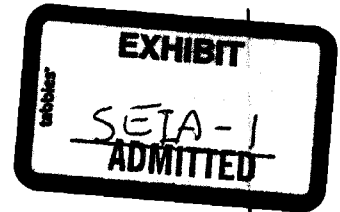
Blank, Gilliam, and Wellinghoff, "Breaking Up Is Not So Hard To Do: A Disaggregation Proposal," *The Electricity Journal*, May 1996.

Summary of Formal Testimonies available upon request

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BEFORE THE ARIZONA CORPORATION COMMISSION

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CHAIRMAN

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COMMISSIONER

BRENDA BURNS
COMMISSIONER

SUSAN BITTER SMITH
COMMISSIONER

BOB BURNS
COMMISSIONER

10 IN THE MATTER OF THE APPLICATION
11 OF ARIZONA PUBLIC SERVICE
12 COMPANY FOR APPROVAL OF
13 UPDATED GREEN POWER RATE
14 SCHEDULES GPS-1, GPS-2 AND GPS-3.

DOCKET NO. E-01345A-10-0394

13 IN THE MATTER OF THE
14 APPLICATION OF ARIZONA PUBLIC
15 SERVICE COMPANY FOR APPROVAL OF
16 ITS 2013 RENEWABLE ENERGY
17 STANDARD IMPLEMENTATION FOR
18 RESET OF RENEWABLE ENERGY
19 ADJUSTOR

DOCKET NO. E-01345A-12-0290

17 IN THE MATTER OF THE APPLICATION
18 OF TUCSON ELECTRIC POWER
19 COMPANY FOR APPROVAL OF ITS 2013
20 RENEWABLE ENERGY STANDARD
21 IMPLEMENTATION PLAN AND
22 DISTRIBUTED ENERGY
23 ADMINISTRATIVE PLAN AND REQUEST
24 FOR RESET OF ITS RENEWABLE
25 ENERGY ADJUSTOR.

DOCKET NO. E-01933A-12-0296

23 IN THE MATTER OF THE APPLICATION
24 OF UNS ELECTRIC, INC. FOR APPROVAL
25 OF ITS 2013 RENEWABLE ENERGY
26 STANDARD IMPLEMENTATION PLAN
27 AND DISTRIBUTED ENERGY
28 ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE
ENERGY ADJUSTOR.

DOCKET NO. E-04204A-12-0297

NOTICE OF ERRATA

Arizona Corporation Commission
DOCKETED

APR 25 2013

DOCKETED BY

11

1 Solar Energy Industries Association ("SEIA"), by and through its undersigned counsel
2 hereby submits this Notice of Errata (the "Notice"). Attached to this Notice is a complete copy
3 of the Direct Testimony of Carrie Cullen Hitt. This version includes the Table of Contents that
4 was inadvertently omitted from the copy filed yesterday but is otherwise identical in all ways to
5 the previously filed testimony.

6
7 **Respectfully submitted** this 25th day of April, 2013.

8
9
10 

11 _____
12 Court S. Rich
13 Rose Law Group pc
14 Attorney for SEIA
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1 **Original and 13 copies filed on**
2 **This 25th day of April, 2013 with:**

3 Docket Control
4 Arizona Corporation Commission
5 1200 W. Washington Street
6 Phoenix, Arizona 85007

7 *I hereby certify that I have this day served the foregoing documents on all parties of record in
8 this proceeding by sending a copy via electronic and/or regular U.S. mail to:*

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DOCKET NO. E-01345A-10-0394

DOCKET NO. E-01345A-12-0290

DOCKET NO. E-01933A-12-0296

DOCKET NO. E-04204A-12-0297

**DIRECT TESTIMONY
OF
CARRIE CULLEN HITT
ON BEHALF OF
SOLAR ENERGY INDUSTRIES ASSOCIATION**

April 25, 2013

TABLE OF CONTENTS
DIRECT TESTIMONY OF CARRIE CULLEN HITT
SOLAR ENERGY INDUSTRIES ASSOCIATION

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1 **INTERVENOR TESTIMONY OF CARRIE CULLEN HITT**
2 **ON BEHALF OF SOLAR ENERGY INDUSTRIES ASSOCIATION**

3 **(Docket Nos. E-01345A-10-0394; E-01345A-12-0290;**
4 **E-01933A-12-0296; E-04204A-12-0297)**

5
6 **I. INTRODUCTION**

7 **Q. PLEASE STATE YOUR NAME AND CONTACT INFORMATION.**

8 A. My name is Carrie Cullen Hitt. My business address is PO Box 534 North Scituate MA
9 02066.

10 **Q. PLEASE STATE YOUR EMPLOYER AND TITLE.**

11 A. I am employed by the Solar Energy Industries Association (SEIA) as Senior Vice
12 President of State Affairs. SEIA is the national trade association for the U.S. solar
13 industry and is a broad-based voice of the solar industry in Arizona. SEIA represents an
14 estimated 31 member companies who employ approximately 1500 people in Arizona
15 across all market segments – residential, commercial, and utility-scale. In addition, SEIA
16 member companies provide solar panels and equipment, financing and other services to a
17 large portion of Arizona solar projects.

18 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

19 A. I am testifying on behalf of SEIA. This testimony represents the views of SEIA and not
20 any individual member company.

21 **Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS.**

22 A. I have extensive experience with respect to the matters to be decided in this case. As
23 Senior Vice President of State Affairs at SEIA, I am responsible for all state level
24 activities on behalf of the organization. This includes net metering, renewable portfolio
25 standards, permitting, interconnection and wholesale market issues, rate design, incentive
26 and tax policies. Prior to SEIA, I served as President of the Solar Alliance, a national
27 solar trade association. As President of the Solar Alliance, I coordinated policies and
28 positions of the association in multiple jurisdictions, and represented the solar PV

1 industry in state and national venues. With respect to solar issues, I am generally familiar
2 with technical and economic characteristics of the solar PV industry. In addition, I have
3 provided expert witness testimony before several state public utility commissions.
4

5 I received my B.A. in Government and History from Clark University in Worcester,
6 Massachusetts and my MA in International Economics from the School of Advanced
7 International Studies at Johns Hopkins University.

8 **Q. PLEASE STATE THE PURPOSE OF YOUR TESTIMONY.**

9 **A.** My testimony addresses the question of how the utilities should be required to comply
10 with Arizona's Distributed Renewable Energy Requirement once the cash incentive
11 program has ended.
12

13 In their 2013 Renewable Energy Standard Implementation Plans ("REST"), Arizona
14 Public Service ("APS"), Tucson Electric Power ("TEP") and UNS Electric, Inc. ("UNS")
15 addressed the issue of how to comply with the Distributed Renewable Energy
16 Requirement once the cash incentive program ended. In its 2013 application, APS
17 proposed a program called "Track and Record", which SEIA and a number of other
18 interested parties opposed. The Arizona Corporation Commission ("ACC" or the
19 "Commission") subsequently combined the Utilities' filings into a single proceeding.
20 (See Docket Nos. E-01345A-10-0394, E-01345A-12-0290, E-01933A-12-0296, and E-
21 04204A-12-0297). This single proceeding is known as the "Track and Record"
22 proceeding. The "Track and Record" proceeding addresses the issue of how the Utilities
23 should comply with the Distributed Renewable Energy Requirement once the cash
24 incentive program ends.
25

26 As a representative of a significant and broad portion of the solar industry in Arizona, on
27 September 20, 2012, SEIA filed its petition to intervene in the Track and Record
28

1 proceeding. The purpose of this testimony is to provide SEIA's position on the
2 aforementioned filing made by the Utilities and recommend action to the Commission.
3

4 **II. SUMMARY**

5 **Q. PLEASE SUMMARIZE YOUR CONCERNS REGARDING THE UTILITIES'**
6 **PROPOSALS IN THE TRACK AND RECORD PROCEEDING.**

7 A. SEIA is concerned that the changes proposed by the Utilities will do significant damage
8 to Arizona's renewable energy investments. Specifically, SEIA is concerned with the
9 continued success of Arizona's distributed energy sector and protecting individuals'
10 property rights interests in their RECs.

11 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS TO THE COMMISSION**
12 **IN REGARDS TO THE TRACK AND RECORD PROCEEDING.**

13 A. SEIA recommends the following:

14 1. The Commission should take no action at this time regarding utility compliance with
15 the Distributed Renewable Energy Requirement (the "carve out").

16 2. If the Commission does take action, the Commission should grant the Utilities a one
17 year waiver from complying with the Distributed Renewable Energy Requirement.
18 During this time the Commission can consider the best policy choices for continued
19 distributed energy development in Arizona.

20 3. The Commission should not eliminate the Distributed Renewable Energy Requirement
21 at this time.
22

23 **III. BACKGROUND**

24 **Q. PLEASE DESCRIBE ARIZONA'S RENEWABLE ENERGY STANARD.**

25 A. The Renewable Energy Standard and Tariff ("RES" or "REST") are regulations
26 promulgated by the Arizona Corporation Commission ("ACC") designed to promote
27 renewable energy investment in Arizona. In November 2006, the ACC updated
28 Arizona's Renewable Energy Standard and Tariff rules to require that "Affected

1 Utilities” must procure renewable energy to serve their retail load in increasing amounts
2 each year. (Decision No. 69127) For example, APS must serve 4% of its retail load with
3 renewable energy by the end of 2013. (Direct Testimony of Gregory L. Bemosky dated
4 March 29, 2013 on behalf of APS hereinafter referred to as “APS Testimony” at p. 4) By
5 2025, Affected Utilities must serve 15% of their retail load with renewable energy.
6 (D.69127 and A.A.C. R14-2-1801 to A.A.C. R14-2-1818) Affected Utilities are defined
7 as “a public service corporation serving retail electric load in Arizona, but excluding any
8 Utility Distribution Company with more than half of its customers located outside of
9 Arizona.” (A.A.C. R14-2-1801(A))

10
11 For the purposes of this testimony, Affected Utilities are Arizona Public Service
12 Corporation, Tucson Electric Power, and UNS Electric Inc. (the “Utilities”).

13 **Q. PLEASE EXPLAIN THE PURPOSE OF THE RES.**

14 A. The RES is designed to drive renewable energy investment and bring down the cost of
15 renewable energy so that it is affordable and accessible. The ACC has made renewable
16 energy a priority because it is an economic boon, job creator, and an environmentally
17 friendly solution to Arizona’s growing energy needs.

18 **Q. HAS THE RES BEEN SUCCESSFUL?**

19 A. Yes. Under the RES, Arizona has installed 1097 MW of solar energy and currently more
20 than 284 solar companies employ 9800 people statewide.¹ Further, Arizona installed 710
21 MW of solar electric capacity in 2012 alone.² This investment has made Arizona one of
22 the leading solar states in the country.³

23 **Q. PLEASE EXPLAIN RECS AND THE PURPOSE OF RECS.**

24 A. Under the RES rules, a Renewable Energy Credit (“REC”) is created for every kWh of
25 renewable energy generated from a Renewable Energy Resource. (A.A.C. R14-2-
26 1803(A)) The Utilities satisfy their RES requirements by procuring and reporting RECs

27
28 ¹ See <http://www.seia.org/state-solar-policy/arizona>, accessed on April 22, 2013

² *Id.*

³ *Id.*

1 which demonstrates the Utilities' retail load has been served with the proper amount of
2 renewable energy. (A.A.C. R14-2-1804) Once the REC is reported, it is considered
3 "retired" and cannot be reused. (A.A.C. R14-2-1804(D))
4

5 In addition to serving as tracking mechanisms for utility compliance under the RES,
6 RECs are commodities with real value and property attributes that can be sold into
7 compliance and voluntary markets.

8 **Q. PLEASE EXPLAIN THE DISTRIBUTED ENERGY CARVE-OUT.**

9 A. Since Arizona began investing in renewable energy in 1996, solar investment has been a
10 priority. The first renewable energy program in Arizona was established in 1999. It was
11 the Solar Energy Portfolio standard, which set a goal that regulated utilities would serve
12 customers with 0.2% solar energy by 1999 and 1% by 2003.⁴ Since that time, Arizona
13 has made significant investments in solar energy. To promote this investment, the ACC
14 implemented the Distributed Renewable Energy Requirement, also known as the DE
15 "carve-out", within the RES. (A.A.C. R14-2-1805) Under the DE carve-out, a specified
16 amount of renewable energy come must from distributed energy. (*Id.*) Specifically, the
17 DE carve-out requires that for all years after 2011, 30% of the renewable energy provided
18 by Affected Utilities come from distributed energy systems. (*Id.*) Half of the distributed
19 energy must come from residential applications and the other half must come from non-
20 residential, non-utility applications. (A.A.C. R14-2-1805(B))

21 **Q. WHAT IS DISTRIBUTED ENERGY?**

22 A. Distributed energy ("DE") is electric generation located on customer premises providing
23 generation to the customer load on site or wholesale energy to the local Utility
24 Distribution Company for use by multiple customers in contiguous distribution substation
25 service areas. (A.A.C. R14-2-1801(A)) The generation size and transmission needs must
26 be small enough that they do not require a Certificate of Compatibility. (*Id.*) A typical
27

28 ⁴DSIRE, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AZ03R&re=0&ee=0 accessed on April 22, 2013

1 example of DE is rooftop solar, in which a residential customer powers a home with
2 energy generated by the rooftop system and/or sends energy back onto the grid.

3
4 Energy that qualifies under the DE carve out must be recognized as a Distributed
5 Renewable Energy Resource as defined under A.A.C. R14-2-1802(B). Many of the
6 technologies recognized under the rule are solar technologies.

7 **Q. WHAT IS THE PURPOSE OF THE DE CARVE-OUT?**

8 A. The DE carve-out was created to encourage investment in DE sources such as rooftop
9 solar to take advantage of the benefits of DE. These benefits include reducing demand
10 during peak times, increasing efficiency, increasing grid reliability, and stimulating
11 Arizona's local economy by encouraging investment in a new local energy economy.⁵
12 (A.A.C. R14-2-1805(A))

13 **Q. HOW DO UTILITIES COMPLY WITH THE DE CARVE-OUT?**

14 A. Utilities comply with the DE carve-out by acquiring RECs and retiring those RECs for
15 compliance purposes. One half of the annual DE requirement must come from residential
16 applications and the other half from non-residential, non-utility applications. (A.A.C.
17 R14-2-1805(C))

18 **Q. WHAT IS THE DE INCENTIVE PROGRAM?**

19 A. To satisfy their DE requirement, the Utilities created an incentive program whereby they
20 exchange a cash incentive for the RECs created by the customer's DE system. (Direct
21 Testimony of Carmine Tilghman on behalf of Tuscon Electric Power Company and UNS
22 Electic, Inc. dated March 29, 2013 hereinafter referred to as "TEP Testimony" at p. 3)
23 The incentive is used to help stimulate investment in DE systems, and the REC is used to
24 satisfy the Utilities' DE compliance requirement. (TEP Testimony at p. 3) The incentive
25 program is structured so that over time, as installations increase, the incentives decrease.
26
27

28 ⁵ See ACC Commissioner William A. Mundell's Letter to the Editor of the Arizona Daily Star, April 29, 2005; See
ACC Commissioner Mark Spitzer's Letter to the Editor of the Arizona Republic, June 14, 2005

(*Id.*) For example, APS' residential incentive started at a high of \$4/watt in 2006 and is now at \$0.10/watt today. (APS Testimony at p. 5)

Q. HAS THE DE CARVE-OUT BEEN SUCCESSFUL?

Yes, the DE carve-out has been very effective in stimulating DE investment. Since 2010, Arizona has increased its solar photo-voltaic capacity from 67 MW to over 200 MW, ranking it third in national photo-voltaic installations.⁶

Q. ARE THE UTILITIES CURRENTLY IN COMPLIANCE WITH THE DE CARVE-OUT?

A. Currently APS has met its residential DE requirement through 2015 and non-residential DE requirement through 2019. (APS Testimony at p. 5) Further, TEP and UNS appear to have enough non-residential RECs to satisfy their non-residential DE requirements for some time, and their incentive programs are coming to an end.⁷ (TEP Testimony at p. 6)

Q. WHAT PROCEEDINGS GAVE RISE TO THIS TESTIMONY?

A. In their 2013 REST plans, the Utilities addressed the issue of how to comply with their DE compliance requirement without a cash incentive. (Docket Nos. E-01345A-12-0290, E-01933A-12-0296, and E-04204A-12-0297) APS proposed a solution called "Track and Record," which received several objections from interested parties including SEIA. As a result, the Commission combined several dockets into this proceeding to address the question of how the Utilities should comply with the DE compliance requirement moving forward. SEIA is an intervening party in this proceeding.

IV. UTILITIES CHALLENGE DE AND REST RULES

Q. ARE THE UTILITIES CHALLENGING THE DE AND REST RULES?

A. Yes.

Q. WHAT HAS PROMPTED THE UTILITIES TO CHALLENGE THE DE AND REST RULES?

⁶ See SEIA/GTM Research U.S. Solar Market Insight Report; U.S. Energy Information Administration <http://www.eia.gov/state/?sid=AZ> accessed on April 22, 2013

⁷ See TEP and UNS 2013 REST Plan and filings (Docket Nos. E-0204A-12-0297; E-01933A-12-0296)

1 A. As stated above, DE installations have increased significantly and the incentives are
2 approaching zero for residential systems, and there currently are not any incentives for
3 the majority of non-residential systems. The Utilities assert that without the incentive,
4 there will not be a mechanism to comply with the DE carve-out. (APS Testimony at p. 6)
5 Further, the Utilities assert that there is no longer a need for the DE carve-out because
6 they are in compliance and the cost of DE has reduced to the point where the incentive no
7 longer is a major driver impacting customer behavior. (TEP Testimony at p. 6)

8 **Q. WHAT DO THE UTILITIES PROPOSE REGARDING THE DE CARVE-OUT?**

9 A. The Utilities made a number of recommendations which involve changing or eliminating
10 the DE carve-out.

11 **Q. PLEASE EXPLAIN THE PROPOSAL PUT FORTH BY APS.**

12 A. APS recommends that the DE carve-out be eliminated entirely. (APS Testimony at p. 7)
13 Until the carve-out is eliminated, APS proposes an approach titled "Track and Record."
14 (*Id.* at p. 6) In its testimony from Greg Bernosky dated March 29, 2013, APS provided a
15 new version of "Track and Record" that differs significantly with what it originally
16 proposed in its 2013 REST Implementation Plan filing that gave rise to this hearing. (*Id.*)
17 This testimony deals only with the version set out in Mr. Bernosky's testimony. (*Id.*)
18 Under "Track and Record", APS would report newly installed DE systems in its territory
19 for informational purposes only. (*Id.*) Customers would keep the RECs associated with
20 their systems. (*Id.*) Further, APS' DE compliance requirement would be temporarily
21 suspended through a waiver. (*Id.*) The waiver would be lifted once the DE carve-out is
22 eliminated through a rulemaking. (*Id.* at pp. 6-7)

23 **Q. DOES SEIA SUPPORT THE PROPOSAL PUT FORTH BY APS?**

24 A. No.

25 **Q. WHY?**

26 A. APS recommends that the DE carve-out be eliminated entirely. SEIA does not support
27 eliminating the DE carve-out.

28 **Q. WHY DOES SEIA OBJECT TO ELIMINATING THE DE CARVE-OUT?**

1 A. Eliminating the DE carve-out at this time would be premature because we do not know
2 how other potential policy changes may affect distributed energy in the near future. For
3 example, APS has indicated it will likely be asking the Commission to significantly alter
4 the State's net-metering policy before the end of the year.⁸ Should net-metering be
5 altered or if a usage fee or other similar fee is installed, the value of solar to a residential
6 or commercial customer would be impacted such that the DE market could be halted
7 completely. The DE carve-out cannot be eliminated on the premise that the market is
8 now self-sustaining while such a substantial change to the financial arrangement
9 underpinning the value of solar is being considered.

10 **Q. PLEASE EXPLAIN THE PROPOSALS PUT FORTH BY TEP AND UNS.**

11 A. To begin, TEP and UNS propose that the DE carve-out be removed from the REST rules
12 for the reasons stated above. (TEP Testimony at pp. 5-6) However, TEP and UNS have
13 proposed the following short term solutions before the DE carve-out is eliminated.

14 i. Waiver and Removal of the DE Carve-Out

15 The first solution put forth by TEP and UNS is a waiver of the DE requirement, followed
16 by a removal of the DE carve-out in a later rulemaking. (TEP Testimony at p. 7) Under
17 this proposal, the Utilities would be allowed to meet the REST rules percentage
18 requirement with RECs from all resources while the REST rules are amended without
19 penalty under the DE carve-out. (*Id.*)

20 ii. Require Customers to Exchange RECs for Net Metering

21 The second proposal put forth by TEP and UNS is a proposal in which the ACC would
22 require a customer to transfer its DG system RECs to its utility in exchange for allowing
23 the customer to engage in net-metering. (TEP Testimony at p. 8) Once approved by the
24 Commission, the Utilities would implement this policy by filing updated tariffs. (*Id.*)

25 iii. "Track and Reduce"

26 Third, TEP and UNS recommend that utilities report the number of kWh sales served
27 from customers' renewable energy systems and then reduce the utilities' Annual
28

⁸ See <http://solarfuturearizona.com/> accessed on April 22, 2013

1 Renewable Energy Requirement by that amount. (TEP Testimony at p. 8) Under this
2 proposal, the Utilities request a waiver of the DE requirement and customers retain
3 ownership of the RECs created by their DE systems. (*Id.*)

4 **Q. DOES SEIA AGREE WITH THE PROPOSALS PUT FORTH BY TEP AND UNS?**

5 **A.** No.

6 **Q. PLEASE EXPLAIN.**

7 **A.** i. Waiver and Removal of the DE Carve-Out

8 As set forth above in response to APS' proposal, it would be premature to remove the DE
9 carve-out at this time.

10 ii. Require Customers to Exchange RECs for Net Metering

11 This solution is not tenable because it requires customers to give up their RECs in
12 exchange for an existing policy. There is no justification to permit the Utilities to take
13 RECs from customers in exchange for net metering.

14 iii. "Track and Reduce"

15 "Track and Reduce" should not be adopted because it is an untested policy that may have
16 unintended consequences, and the Commission should take this time to gather
17 information and consider all policy options before moving forward.

18
19 **V. SEIA'S RECOMMENDATIONS**

20 **Q. HOW SHOULD THE COMMISSION PROCEED REGARDING THE DE**
21 **CARVE-OUT?**

22 **A.** The Utilities are generally in compliance at this time, so there is no immediate need to
23 make drastic policy changes. However, if the Commission does take action, SEIA urges
24 the Commission to grant the Utilities a one year waiver from complying with the DE
25 carve-out requirement. SEIA does not recommend that the DE carve-out requirement be
26 eliminated.

27 **Q. PLEASE EXPLAIN THE WAIVER RECOMMENDED BY SEIA.**
28

1 A. The Commission would grant the Utilities a one year waiver from their DE compliance
2 requirements immediately. During the term of the waiver, the RECs associated with
3 installed DE systems would remain the property of the system's owner. During the
4 waiver period, the Utilities would track the energy produced by DE installations through
5 the continued deployment of DE production meters and regularly report the amount of
6 energy produced to the Commission. This would give parties additional information to
7 determine the appropriate way to move forward on a long term basis. However, so as to
8 maintain the integrity of the RECs associated with the DE systems, the Utilities would
9 not use this information to satisfy any REST requirements. At the end of the one year
10 period, the Commission would implement DE policy based on the data collected through
11 the year that best suits the needs of the DE market and Arizona ratepayers.

12 **Q. WOULD THE DE CARVE-OUT OR RES BE CHANGED BY THIS WAIVER?**

13 A. No, the DE carve-out and REST rules would remain intact, but the Utilities would be
14 waived from compliance for one year.

15 **Q. WHY DOES SEIA RECOMMEND THAT THE COMMISSION GRANT A ONE**
16 **YEAR WAIVER?**

17 A. SEIA recommends this course for the following reasons.

18 i. More Fact Finding is Needed

19 The questions the Commission is grappling with in this proceeding are very new
20 questions. Even the Utilities admit that they are just now considering the next steps that
21 should be taken in the next phase of distributed energy development. (APS Testimony at
22 p. 1; TEP Testimony at p. 5) SEIA's proposal would give all parties involved, including
23 the Commission, sufficient time to consider the impacts of different policy options that
24 have yet to be fully vetted and discussed.

25
26 ii. The Discussion Regarding Net Metering is Ongoing

27 Second, there is currently a discussion that is occurring about the benefits and costs of net
28 metering. At this time, both APS and RUCO have begun workshops to evaluate these

costs and benefits.⁹ It is premature to make overarching policy decisions while this discussion is ongoing, as we do not know the results or impacts of such a discussion, which is a potentially significant threat to Arizona's renewable energy industry.

iii. The Commission Should Protect Arizona's Significant DE Investment

As stated earlier in this testimony, Arizona has made a significant investment in DE. To move quickly on new policy could be very detrimental to the burgeoning DE sector, and Arizona's renewable energy goals.

iv. The Commission's Decision Regarding DE Will Likely Have Widespread Ramifications for the REC Market

Finally, the decision regarding DE will likely have significant and far reaching implications for the REC market. For example, had the Commission moved forward with APS' original "Track and Record" proposal, Arizona's DG RECs would have been rendered worthless. This would have resulted in serious negative implications for Arizona's renewable energy market and a major loss for Arizona ratepayers.

In conclusion, Arizona has made significant strides implementing DE throughout the state. The Utilities are generally in compliance for the next few years and renewable energy is growing at a steady pace statewide. A midstream change will disrupt the momentum that Arizona has achieved in its renewable energy markets. Instead, the Commission should take this opportunity to vet all viable policy options before moving forward.

Q. WOULD RETAINING THE DE CARVE-OUT IMPOSE ADDITIONAL COSTS ON ARIZONA RATEPAYERS?

A. No. With a one year waiver in place, this safeguard comes at no additional cost or burden to ratepayers.

⁹ See <http://solarfuturearizona.com/> accessed on April 22, 2013; See RUCO's *Notice of Stakeholder Workshop* filed April 17, 2013

1 **VI. CONCLUSION**

2 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

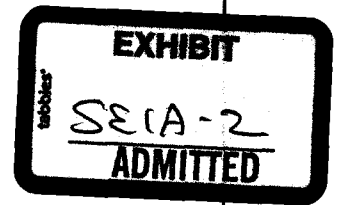
3 A. 1. The Commission should take no action at this time regarding utility compliance with
4 the Distributed Renewable Energy Requirement (the "carve out").

5 2. If the Commission does take action, the Commission should grant the Utilities a one
6 year waiver from complying with the Distributed Renewable Energy Requirement.
7 During this time the Commission can consider the best policy choices for continued
8 distributed energy development in Arizona.

9 3. The Commission should not eliminate the Distributed Renewable Energy Requirement
10 at this time.

11 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

12 A. Yes.
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BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
CHAIRMAN

GARY PIERCE
COMMISSIONER

BRENDA BURNS
COMMISSIONER

SUSAN BITTER SMITH
COMMISSIONER

BOB BURNS
COMMISSIONER

IN THE MATTER OF THE APPLICATION
OF ARIZONA PUBLIC SERVICE
COMPANY FOR APPROVAL OF
UPDATED GREEN POWER RATE
SCHEDULES GPS-1, GPS-2 AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE
APPLICATION OF ARIZONA PUBLIC
SERVICE COMPANY FOR APPROVAL OF
ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION FOR
RESET OF RENEWABLE ENERGY
ADJUSTOR

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION
OF TUCSON ELECTRIC POWER
COMPANY FOR APPROVAL OF ITS 2013
RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE
ENERGY ADJUSTOR.

DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION
OF UNS ELECTRIC, INC. FOR APPROVAL
OF ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN
AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE
ENERGY ADJUSTOR.

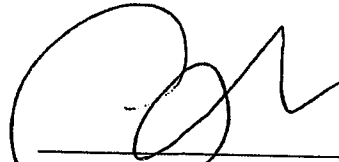
DOCKET NO. E-04204A-12-0297

**REBUTTAL TESTIMONY OF
CARRIE CULLEN HITT**

1 Solar Energy Industries Association ("SEIA"), by and through its undersigned counsel
2 hereby submits the Rebuttal Testimony of Carrie Cullen Hitt.

3
4 **Respectfully submitted** this 8th day of May, 2013.

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A handwritten signature in black ink, appearing to read 'Court S. Rich', is written over a horizontal line.

Court S. Rich
Rose Law Group pc
Attorney for SEIA

1 **Original and 13 copies filed on**
2 **This 8th day of May, 2013 with:**

3 Docket Control, Arizona Corporation Commission
4 1200 W. Washington Street
5 Phoenix, Arizona 85007

6 *I hereby certify that I have this day served the foregoing documents on all parties of record in*
7 *this proceeding by sending a copy via electronic and/or regular U.S. mail to:*

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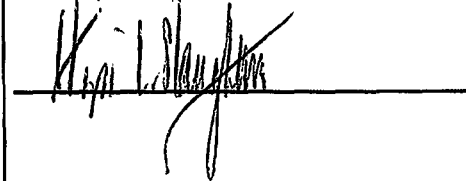
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DOCKET NO. E-01345A-10-0394

DOCKET NO. E-01345A-12-0290

DOCKET NO. E-01933A-12-0296

DOCKET NO. E-04204A-12-0297

REBUTTAL TESTIMONY
OF
CARRIE CULLEN HITT
ON BEHALF OF
SOLAR ENERGY INDUSTRIES ASSOCIATION

MAY 8, 2013

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TABLE OF CONTENTS
REBUTTAL TESTIMONY OF CARRIE CULLEN HITT
SOLAR ENERGY INDSTUTRIES ASSOCIATION

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III. Conclusion.....3

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Carrie Cullen Hitt. My business address is PO Box 534 North Scituate MA
4 02066.

5 **Q. PLEASE STATE YOUR EMPLOYER AND TITLE.**

6 A. I am employed by the Solar Energy Industries Association (SEIA) as Senior Vice
7 President of State Affairs. SEIA is the national trade association for the U.S. solar
8 industry and is a broad-based voice of the solar industry in Arizona. SEIA represents an
9 estimated 31 member companies who employ approximately 1500 people in Arizona
10 across all market segments – residential, commercial, and utility-scale. In addition, SEIA
11 member companies provide solar panels and equipment, financing and other services to a
12 large portion of Arizona solar projects.

13 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

14 A. I am testifying on behalf of SEIA. This testimony represents the views of SEIA and not
15 any individual member company.

16 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING ON
17 BEHALF OF SEIA?**

18 A. Yes. I filed direct intervenor testimony on behalf of SEIA.¹

19 **Q. PLEASE SUMMARIZE THE PURPOSE OF YOUR TESTIMONY.**

20 A. SEIA is concerned that the Track and Monitor solution proposed by Staff in the direct
21 testimony of Robert Gray on April 24, 2013 may be considered double counting by
22 Renewable Energy Credit (“REC”) market participants.² If this were the case, Track and
23 Monitor would likely devalue Arizona RECs and deprive REC owners of their property
24 rights. We do not believe this to be the Arizona Corporation Commission’s
25 (“Commission”) intent in this proceeding, and strongly urge the Commission to proceed
26 with caution before implementing new policy that will impact Arizona RECs.

27 ¹ See Intervenor Testimony of Carrie Cullen Hitt on Behalf of Solar Energy Industries Association, April 24, 2013

28 ² See Direct Testimony of Robert G. Gray Executive Consultant III Utilities Division Arizona Corporation
Commission, April 24, 2013 at p. 7

II. RESPONSE TO STAFF'S "TRACK AND MONITOR" PROPOSAL

Q. PLEASE STATE STAFF'S TRACK AND MONITOR PROPOSAL.

A. Under Track and Monitor, the Renewable Energy Standard and Tariff ("REST") requirement for each utility would be reduced on a kWh per kWh basis, for all Distributed Energy ("DE") that is produced in their service territory where no transfer of RECs takes place.³

Q. PLEASE STATE YOUR RESPONSE TO STAFF'S PROPOSAL.

A. The Commission should not adopt Track and Monitor at this time because it is unclear how Track and Monitor would affect the value of RECs, REC property rights, and Arizona's renewable energy market.

Q. WILL TRACK AND MONITOR ADDRESS THE CONCERNS PUT FORTH BY PARTIES THAT WERE OPPOSED TO ARIZONA PUBLIC SERVICE COMPANY'S ORIGINAL TRACK AND RECORD PROPOSAL?

A. It is unclear. Several parties, including SEIA, opposed the original Track and Record proposal that gave rise to this proceeding because it constituted double counting.⁴ Similarly, it is possible that Track and Monitor would be considered double counting because it reduces the utilities' REST requirement for all DE production where no transfer of RECs takes place. If Track and Monitor is viewed as double counting by REC market participants, the value of Arizona RECs and the property rights of Arizona REC holders will be threatened.⁵

Therefore, SEIA strongly urges the Commission to grant the utilities a one year waiver from the DE carve-out to allow for sufficient time to address how the various policy options will impact the value of RECs, REC property rights, and Arizona's renewable energy market. During the waiver period, the utilities would track the energy produced

³ *Id.*

⁴ See ACC Decision 73636 at p. 5

⁵ There are several entities engaged in the REC market that have expressed concern over the integrity of RECs in this proceeding, including the Department of Defense, Walmart, the Center for Resource Solutions, and the Renewable Energy Markets Association.

1 by DE installations through the continued deployment of DE production meters and
2 regularly report the amount of energy produced to the Commission. However, this
3 information would not count towards the utilities' REST requirements.

4 **Q. IS IT SEIA'S POSITION THAT A PROPOSAL SIMILAR TO TRACK AND**
5 **MONITOR SHOULD NEVER BE IMPLEMENTED?**

6 A. No. SEIA's position is that the Commission does not have enough information at this
7 time to implement Track and Monitor or a similar policy because it does not know what
8 impact such a program would have on RECs and renewable energy development.

9 **Q. DOES YOUR TESTIMONY PERTAIN TO OTHER ISSUES?**

10 A. No it does not. This testimony is only focused on Staff's Track and Monitor proposal.

11 12 **III. CONCLUSION**

13 **Q. PLEASE SUMMARIZE YOUR RESPONSE TO STAFF'S PROPOSAL AND**
14 **SEIA'S RECOMMENDATION TO THE COMMISSION.**

15 A. Track and Monitor should not be adopted at this time because it may have negative
16 unintended consequences on RECs, the renewable energy market, and Arizona
17 ratepayers. Instead, the Commission should grant the utilities a one year waiver from the
18 DE carve-out. During the waiver period, the utilities would track the energy produced by
19 DE installations through the continued deployment of DE production meters and
20 regularly report the amount of energy produced to the Commission. However, this
21 information would not count towards the utilities' REST requirements. This will give the
22 Commission the opportunity to consult with renewable energy stakeholders affected by
23 these policy changes, and ensure that its policy solution does not negatively impact
24 Arizona's renewable energy market, RECs, and ratepayers.

25 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

26 A. Yes.
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TESTIMONY OF KEN BAKER

**On Behalf of Wal-Mart Stores, Inc.
and Sam's West, Inc.**

**Docket Nos. E-01345-A-10-0394; E-01345A-12-0290;
E-01933A-12-0296; E04204A-12-0297**

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Introduction

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND
OCCUPATION.**

A. My name is Kenneth E. Baker. My business address is 2001 SE 10th St.,
Bentonville, AR 72716-0550. My title is Senior Manager for Sustainable
Regulation for Wal-Mart Stores, Inc.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS DOCKET?

A. I am testifying on behalf of Wal-Mart Stores, Inc. and Sam's West, Inc.
(collectively "Walmart").

Q. PLEASE DESCRIBE YOUR EDUCATION AND EXPERIENCE.

A. In 1985 I received my B.S. degree in Health Science from College of St.
Frances and later attended law school at the University of Arkansas at Little
Rock School of Law, graduating in 1992 with a J.D. degree.
I then practiced law at the Center for Arkansas Legal Services from 1992 –
1999 prior to joining Walmart. Early in my career at Walmart, I have held the
position of Manager of Real Estate where I helped locate sites for distribution

1 centers. My duties in this position included locating sites and negotiating with
2 communities to build distribution centers. In 2006, I transferred to the Energy
3 Department and am currently the Senior Manager for Sustainable Regulation
4 and Legislation. My current duties include, monitoring and participation in
5 utility commission cases and monitoring legislation that primarily deals with
6 policy matters that could potentially impact Walmart business. I have also
7 been involved in the negotiation, drafting, and execution of renewable energy
8 and energy efficiency contracts.

9 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE**
10 **THE ARIZONA PUBLIC SERVICE COMMISSION ("THE**
11 **COMMISSSION")?**

12 A. No.

13 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE**
14 **OTHER STATE REGULATORY COMMISSIONS?**

15 A. Yes. I have submitted testimony before Commissions in Arkansas, Missouri,
16 New Mexico, South Carolina, and Massachusetts. In addition, I have
17 submitted testimony before legislative committees in Texas and Pennsylvania.
18 My testimony has included topics concerning demand response and other
19 demand side management measures and renewable energy issues.

20 **Q. WHAT IMPACT DOES WALMART HAVE ON THE ARIZONA**
21 **ECONOMY?**

22 A. As of January, 2013, Walmart has 112 facilities and over 31,000 associates in

1 Arizona. Additionally, as of fiscal year ending 2013, Walmart spent over
2 \$681 million for merchandise and services with Arizona suppliers, supporting
3 26,232 supplier jobs in the state.¹

4 **Q. CAN WALMART PROVIDE EXAMPLES OF HOW A LARGE**
5 **COMMERCIAL ENERGY CUSTOMER CAN MAKE SUBSTANTIAL**
6 **CONTRIBUTIONS TOWARDS THE GOAL OF IMPLEMENTATION**
7 **OF RENEWABLE ENERGY?**

8 A. Yes. Walmart has made an operational commitment to environmental
9 stewardship in many aspects of its business, including the installation and use
10 of renewable energy and energy efficiency technologies. Currently in
11 Arizona, Walmart has 22 operating solar installations.

12 **Q. CAN YOU PROVIDE AN EXAMPLE OF THE AMOUNT OF**
13 **RENEWABLE ENERGY GENERATED AT WALMART FACILITIES**
14 **IN ARIZONA?**

15 A. In 2012 Walmart solar facilities in Arizona generated approximately 62
16 million kWh of renewable energy.

17
18 **Purpose of Testimony**

19 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

20 A. The purpose of my testimony is to address the proposals for the treatment of
21 distributed energy ("DE") renewable energy credits ("RECs") and compliance

¹ See <http://corporate.walmart.com/our-story/locations/united-states#/united-states/arizona>

1 with the Renewable Energy Standard and Tariff Rules ("REST") put forth by
2 Arizona Public Service Company ("APS"), Tucson Electric Power Company
3 ("TEP"), and UNS Electric, Inc. ("UNS"). I respond specifically to the
4 testimonies of Greg Bernosky on behalf of Arizona Public Service Company
5 ("APS") and Carmine Tilghman on behalf of Tucson Electric Power Company
6 ("TEP") and UNS Electric, Inc. ("UNS").
7

8 **Summary of Recommendations**

9 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

10 **A.** My recommendations to the Commission are as follows:

- 11 1) The Commission should reject the first and second options presented by TEP
12 and UNS.
- 13 2) Walmart takes no position at this time on the "Track and Reduce" proposal of
14 TEP and UNS, however, Walmart reserves the right to comment in future
15 testimony.
- 16 3) Walmart endorses the portion of the APS proposal in which the customer or
17 system owner would retain the RECs associated with their generation system
18 and the utility would record and report the renewable generation for
19 informational purposes.
- 20 4) Walmart opposes the specific proposal by APS to eliminate the DE
21 requirement from the RPS requirement of each utility.
- 22 5) If the Commission deems it necessary to suspend the DE requirement in the

1 RPS, Walmart proposes that only a temporary waiver be given.

2 **APS, TEP, and UNS Proposals**

3 **Q. PLEASE SUMMARIZE YOUR UNDERTANDING OF THE APS**
4 **PROPOSAL FOR THE TREATMENT OF RECS.**

5 A. It is my understanding that APS proposes a "Track and Record" system
6 whereby APS: 1) would no longer have a firm DE requirement and no longer
7 acquire RECs generated through DE and 2) APS would track the amount of
8 incremental energy from newly installed DE systems and report that
9 information to the Commission for informational purposes. *See* Direct
10 Testimony of Gregory L. Bernosky, page 6, line 9 to line 15.

11 **Q. WHY DOES APS PROPOSE TO ELIMINATE ITS DE**
12 **REQUIREMENT?**

13 A. Based upon the testimony of APS witness Bernosky, APS is in a position
14 where incentives are no longer necessary in order for APS to achieve
15 compliance with its obligations under the Renewable Energy Standard
16 ("RES") rules. The testimony indicates that the owner of the system would
17 retain the REC's generated by the renewable system and APS would track the
18 generation for informational purposes. *Id.*, page 2, line 11 to line 12.

19 **Q. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE TEP AND**
20 **UNS PROPOSALS FOR THE TREATMENT OF RECS.**

21 A. It is my understanding that TEP and UNS recommend the following three
22 options to the Commission:

- 1) Granting of a full waiver of the REST rules until the rules have been modified with no indication of the treatment of RECs in the interim;
- 2) The Commission could require a customer to transfer its renewable energy system RECs to the utility in exchange for net-metering as fair compensation for the benefits associated with net metering; and
- 3) A "Track and Reduce" mechanism. TEP/UNS witness Tilghman describes the mechanism as a method of allowing the utilities to report the number of kWh sales served from customers renewable energy systems where no transfer of RECs took place and then reduce the utility's annual renewable energy requirement by that amount. This method would allow the customer to retain ownership of the RECs where they would be able to sell the RECs in any market. See Direct Testimony of Carmine Tilghman, page 7, line 16, to page 8, line 17.

Q. DOES WALMART RECOMMEND ADOPTION OF THE FIRST AND SECOND OPTIONS PUT FORTH BY TEP AND UNS?

A. No. The Commission should reject the first option because the proposal could have adverse impact on the diversity of the renewable generation mix by discouraging customers from installing distributed renewable generation. The REST rules were put in place to encourage the installation and proliferation of renewable energy resources. If the rules were suspended for any reason, the customers that still rely on ratepayer funded incentives, would likely not go forward with their plans. Therefore, a reduction in the amount of customer

1 sited renewable energy systems would likely be seen.

2 In regards to the second option, Walmart has concerns over the portion
3 of the proposal in which the utilities state, "As an alternative to a waiver, the
4 Commission also could require a customer to transfer its DG system's RECs
5 to a utility in exchange for net-metering as fair compensation for the benefits
6 associated with net-metering." There is no guarantee that the renewable
7 energy systems installed on a customer's property will produce more power
8 than will be used in the facility. Furthermore, to take RECs in exchange for
9 net metering would be tantamount to simply taking the RECs with no
10 compensation to either the customer or the system owner. Additionally, even
11 if circumstances did exist in which a customer transferred their renewable
12 energy generation back onto the grid is still objectionable on public policy
13 grounds, in that it would unjustly enrich the utility, while leaving the pro-
14 active customer without the benefit of the associated REC and, therefore, no
15 claim to the generation of renewable power.

16 **Q. DOES WALMART HAVE A POSITION ON THE "TRACK AND**
17 **REDUCE" MECHANISM SUGGESTED BY TEP AND UNS?**

18 A. Walmart takes no position at this time on the "Track and Reduce" proposal
19 and reserves the right to comment in future testimony as more information
20 becomes available. However, Walmart would oppose any attempt to
21 permanently eliminate any portion of the DE carve-out.

22 **Q. WHAT IS WALMART'S POSITION ON THE PROPOSAL PUT**

FORTH BY APS?

A. Walmart endorses the specific portion of the APS proposal in which the customer or system owner would retain the RECs associated with their generation system and the utility would record and report the renewable generation for informational purposes. However, Walmart opposes the proposal to eliminate the DE requirement. To permanently remove the DE requirement has a potentially chilling impact on customer-sited installations.

Q. DOES WALMART HAVE ANY RECOMMENDATIONS FOR THE COMMISSION CONCERNING THIS ISSUE?

A. Walmart recommends that if the Commission deems it necessary to suspend the DE requirement that only a temporary waiver be given. Mr. Bernosky states in his testimony beginning on page 2, line 11 "APS is now in a position where DE incentives are no longer necessary for APS to achieve compliance with the RES rules over the next several years." That statement implies that there may come a time when the DE carve-out is again necessary to continue the installation of customer sited renewable generation facilities. As such, customers should have the opportunity to participate in the program and provide diversity in the generation base in the territory of each utility.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

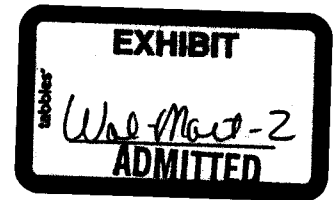
A. Yes.

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**REBUTTAL TESTIMONY OF
KENNETH E. BAKER**

**On Behalf of
WAL-MART STORES, INC. AND SAM'S WEST, INC.
May 8, 3013**

Docket Nos. E-01345A-10-0394, E-01345A-12-0290,
E-01933A-12-0296 and E-04204A-12-0297



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Introduction

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND
OCCUPATION.**

A. My name is Kenneth E. Baker. My business address is 2001 SE 10th St.,
Bentonville, AR 72716-0550. My title is Senior Manager for Sustainable
Regulation for Wal-Mart Stores, Inc.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS DOCKET?

A. I am testifying on behalf of Wal-Mart Stores, Inc. and Sam's West, Inc.
(collectively "Walmart").

Q. DID YOU SUBMIT DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

**Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY
SUBMITTED BY VARIOUS PARTIES IN THIS DOCKET?**

A. Yes. I have reviewed the comments filed by the Renewable Energy
Markets Association ("REMA"), and the testimony of Western
Resource Advocates ("WRA"), The Vote Solar Initiative, the Solar
Industry Energy Association ("SEIA"), the Department of Defense and
all other Federal Executive Agencies, NRG Solar LLC, the Residential
Utility Consumer Office and the Utilities Division ("Staff") of the
Arizona Corporation Commission.

1 **Q. BASED UPON YOUR REVIEW OF THE DIRECT TESTIMONY**
2 **OF THE PARTIES LISTED ABOVE, ARE THERE ANY**
3 **REVISIONS YOU WISH TO MAKE IN YOUR DIRECT**
4 **TESTIMONY?**

5 A. No.

6 **Q. BASED UPON YOUR REVIEW OF THE DIRECT TESTIMONY**
7 **OF THE PARTIES LISTED ABOVE, ARE THERE ANY**
8 **ADDITIONS YOU WOULD LIKE TO MAKE TO YOUR**
9 **DIRECT TESTIMONY?**

10 A. Yes. Several parties/commenters including WRA, REMA, and The
11 Vote Solar Initiative expressed concerns that if a utility were required to
12 track the amount of incremental energy produced by DE systems in its
13 service territory and report that information to the Commission, it would
14 result in double counting of RECs.

15 **Q. DO YOU AGREE WITH THOSE ASSESSMENTS AS THEY**
16 **RELATE TO DOUBLE COUNTING?**

17 A. I believe that the proposal that I made in my Direct Testimony would
18 not result in a double count of RECs. If a utility were granted a
19 temporary waiver of the DE requirement of the RES rules as discussed
20 in my direct testimony, there would be no compliance obligation for it

1 to comply with. The information supplied to the Commission by the
2 utility would be strictly for informational purposes and not for satisfying
3 any type of compliance obligation.

4 It is my understanding that as long as the temporary waiver is not
5 based upon kWh production, no controversial issue would exist. My
6 proposal was that the entire DE requirement could be waived on a
7 temporary (year-to-year) basis as appropriate. Unlike the "Track and
8 Reduce" proposal by TEP and the "Track and Monitor" proposal by
9 Staff, the waiver I propose would not be based on the kWh production
10 of distributed generation systems, but would be a waiver from the full
11 amount of the DE requirement of the RES rules for a given year.

12 I have attached to my testimony as Exhibit "A" excerpts from the
13 Green-e Energy National Standard (Version 2.3) adopted by the Center
14 for Resource Solutions (CRS). Pursuant to this Standard, double
15 counting would result when "the same REC is used by an electricity
16 provider or utility **to meet an environmental mandate**, such as an
17 RPS, and is also used to satisfy customer sales under Green-e Energy"
18 (emphasis added). If the utility was granted a waiver from the RES DE
19 requirement for a particular year, and merely reported to the
20 Commission the kWhs generated by distributed resources

1 interconnected to its distribution system, the utility would not be using
2 such kWhs to "meet" any environmental mandate. I note that CRS's
3 comments filed in this docket on November 16, 2012 (attached hereto as
4 Exhibit "B") suggested that it "may be possible to craft a compliance
5 obligation waiver that preserved the value and ownership of the REC.
6 Such a policy would need to be carefully constructed, applied and
7 enforced such that the waiver was not dependent on renewable kWh of
8 generation by [DE] facilities." Contrary to the suggestion of some other
9 parties, it appears that kWhs reported to the Commission, but not
10 claimed to be satisfying a utility's RES DE requirement (because that
11 requirement was waived for a given year), or any other portion of the
12 utility's RES requirement, would not result in double counting as
13 defined by CRS in its Green-e National Standard.
14

15 **Q. BASED UPON THE TESTIMONY OF OTHER PARTIES IN**
16 **THIS DOCKET, ARE THERE ANY OTHER APPROACHES**
17 **WALMART WOULD CONSIDER APPROPRIATE?**

18 **A.** Yes. As proposed by SEIA (*see* Direct Testimony of Carrie Cullen Hitt,
19 pg.11 lines 4-14) "The Commission would grant the Utilities a one year
20 waiver from their DE compliance requirements immediately. During

1 that term of the waiver, the REC's associated with the installed DE
2 system would remain the property of the system's owner. During the
3 waiver period, the Utilities would track the energy produced by the DE
4 installations through the continued deployment of the DE production
5 meters and regularly report the amount of energy produced to the
6 Commission. This would give the parties additional information to
7 determine the appropriate way to move forward on a long term basis.
8 However, so as to maintain the integrity of the REC's associated with
9 the DE systems, the Utilities would not use that information to satisfy
10 any REST requirements...."

11 Walmart could support this process which would allow for the
12 parties to work together in hopes of formulating a long term solution
13 that could not only resolve the REC issues in Arizona but could become
14 a model for the rest of the country.

15 **Q. DOES THAT CONCLUDE YOUR REPLY TESTIMONY?**

16 **A. Yes.**

EXHIBIT A



Energy

Green-e Energy National Standard Version 2.3

| | |
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San Francisco, CA 94129
415-561-2100
energy@green-e.org

Version 2.3 Released: April 23, 2013
Generation occurring on or after July 1,
2014 must comply with Version 2.3

Next Scheduled Revision: April 2018

promote their purchase must meet the requirements of the Green-e Marketplace Program: www.green-e.org/marketplace.

B. Vintage of Eligible Renewables

A Green-e Energy certified product may include only renewables that are generated in the calendar year in which the product is sold, the first three months of the following calendar year, or the last six months of the prior calendar year.

C. Fully Aggregated Renewables

Green-e Energy only certifies renewable energy products that are fully aggregated to the extent possible under law.

Green-e Energy certified MWh (electricity or REC) must contain all the greenhouse gas (GHG) emission reduction benefits, including carbon dioxide (CO₂) reduction benefits, associated with the MWh of renewable electricity when it was generated.

Emissions of other capped pollutants where allowances are not routinely assigned to renewable electricity generators¹² are not required to be included in Green-e Energy certified renewable electricity or RECs¹³.

D. Renewable Portfolio Standard (RPS) Renewables, Other Mandated Renewables, and Financial Incentives

Green-e Energy certified products must be comprised of eligible renewable generation over and above anything required by state or federal RPS requirements, legislation, or settlement agreements. If a utility or electricity marketer is subject to an RPS or other mandate or agreement, they must comply with it regardless of the existence of a voluntary market for renewable energy. If a participant in Green-e Energy is determined to be out of compliance with these obligations, or is selling renewables from a mandated facility, that may be grounds for decertification from Green-e Energy.

Renewable energy or RECs may not be used in a Green-e Energy certified product under the following circumstances:

- 1) The REC or the electricity from which the RECs are derived is being used simultaneously to meet a local, state, or federal energy mandate or other legal requirement; or
- 2) The RECs are derived from a renewable facility that has been mandated by a local, state, or federal government agency or was required under any legal requirement.

¹² For example, under the national sulfur dioxide cap, allowances are assigned to entities with compliance obligations, i.e. polluting entities.

¹³ As of 7/15/2010, such capped pollutants include sulfur dioxide nationally and the oxides of nitrogen regionally. For more details on marketing claims under the Green-e Energy program please see the Green-e Energy Code of Conduct and Customer Disclosure Requirements.

The sole exception to (1) and (2) is a facility that is generating renewable energy in excess of the government mandate or other legal contract, in which case that excess (either renewable electricity or the RECs associated with the renewable electricity) may be used in a Green-e Energy certified product.

If the product meets 100% of a customer's electricity use with eligible renewables, Green-e Energy allows a percentage of a product's content to be satisfied by renewable portfolio standard (RPS) state-mandated renewables up to the percentage RPS requirement. For example, if the RPS is set at 5% (either company based or product based), up to 5% of the Green-e Energy certified product can be satisfied with renewable power purchased to meet a mandated RPS requirement. This applies only to products that meet 100% of a customer's electricity use with Green-e Energy eligible renewables.

RECs or renewable energy from renewable generating facilities that obtain tax or financial incentive payments are eligible under Green-e Energy (to the extent allowed by law, regulation, and contract language governing the tax or financial incentives program).

E. Double Counting and Use of Utility Resources

Eligible RECs or renewable energy can be used once and only once; making a claim (e.g. stating "we buy wind power") is one example of a 'use' that results in retirement. Renewable energy or RECs (or the renewable or environmental attributes incorporated in that REC) that can be legitimately claimed by another party may NOT be used in Green-e Energy certified REC products.¹⁴ Examples of prohibited double uses include, but are not limited to:

- 1) When the same REC is sold by one party to more than one party, or any case where another party has a conflicting contract for the RECs or the renewable electricity;
- 2) When the same REC is claimed by more than one party, including any expressed or implied environmental claims made pursuant to electricity coming from a renewable energy resource, environmental labeling or disclosure requirements. This includes representing the energy from which RECs are derived as renewable in calculating another entity's product or portfolio resource mix for the purposes of marketing or disclosure;
- 3) When the same REC is used by an electricity provider or utility to meet an environmental mandate, such as an RPS, and is also used to satisfy customer sales under Green-e Energy; or
- 4) Use of one or more attributes of the renewable energy or REC by another party (See Section III.C. "Fully Aggregated Renewables" for details). This includes when a REC is simultaneously sold to represent 'renewable electricity' to one party, and one or more

¹⁴ If the owner of a renewable generation facility is reporting direct greenhouse gas emissions in a legally binding (through voluntary agreement, law or regulation) cap-and-trade program and the renewable energy facility is included within the organizational boundary in the reporting structure, the following applies: Renewable energy facilities that are owned by entities participating in a legally binding greenhouse gas cap-and-trade program are ineligible under Green-e Energy. Green-e Energy may grant exceptions on a case-by-case basis if the cap-and-trade program has an accounting mechanism that assures that the GHG emissions benefits of renewable electricity and/or RECs are not double counted or double claimed, such as exists in nine out of 10 states participating in the Regional Greenhouse Gas Initiative (RGGI). Future cap-and-trade systems will be considered as they are developed.

Attributes associated with the same MWh of generation (such as CO2 reduction) are also sold, to another party.

When a utility is involved in a REC transaction, either as a generator, a purchaser of RECs, or a purchaser of the commodity electricity from which the RECs have been derived, the local utility commissions in the states where the electricity was generated and where the electricity is sold must be notified of the transactions and, in some cases, of the money received by the utility.

F. Customer-Sited Facilities

On-grid customer sited (behind the meter) facilities that meet the eligible renewables definition are eligible sources for Green-e Energy. Customer sited off-grid renewables are not eligible. Any generation unit less than or equal to 10 kW may use a conservative engineering estimate of output. CRS must pre-approve the estimation methodology. Systems over 10 kW must be metered.

Customer-sited generators (such as net-metered solar) cannot claim to be selling/supplying renewable electricity if they sell the RECs (in part or in whole) separately.

G. Location of Eligible Generation Facilities

Renewable electricity generation facilities supplying renewable MWh to Green-e Energy certified renewable energy products may only be located in: the 50 US states; Puerto Rico; Canada; or portions of North American Electricity Reliability Corporation regions located in Mexico. Eligibility of other locations outside of these areas will be considered and decided upon by the Green-e Governance Board on a case-by-case basis. Additional geographic restrictions apply to utility green pricing and competitive electricity products; see section IV.A and IV.B.

IV. ADDITIONAL CRITERIA FOR COMPETITIVE ELECTRICITY AND UTILITY GREEN PRICING PRODUCTS

A. Geographic Eligibility for Electricity Products¹⁵

For electricity products (i.e. products used to meet a customer's electricity needs), provider can source from one or more of the following geographic boundaries:

- a) The state where the customer is located; and/or
- b) The North American Electric Reliability Corporation (NERC) region, Independent System Operator (ISO), Regional Transmission Organization (RTO) or Balancing Authority Area of the customer being served; and/or

¹⁵ For Green-e Energy certified products sold in Connecticut under the CT DPUC ATSO Program, renewable resources can be sourced from eligible renewable facilities located in New England, New York, New Jersey, Delaware, Pennsylvania and/or Maryland consistent with the CT DPUC ATSO rules. This change will remain in effect as long as the CT DPUC ATSO rules are in effect.

EXHIBIT B

ORIGINAL



CRS

resource
solutions



0000140799

OPEN MEETING AGENDA ITEM

E-01345A-12-0290
E-01345A-10-0394

AZ CORPORATION
DOCKET COMMISSION

November 15, 2012

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Arizona Corporation Commission
DOCKETED

NOV 16 2012

Paul Newman
Commissioner
Arizona Corporation Commission
Commissioners Wing
1200 W. Washington - 2nd Floor
Phoenix, Arizona 85007

DOCKETED BY

nr

Dear Commissioner Newman,

The Center for Resource Solutions (CRS) appreciates the opportunity to provide input to the Arizona Corporation Commission (the Commission) on the proposed Track and Record option for utilities to use kilowatt-hours (kWh) from interconnected distributed generation (DG) for compliance with Arizona's Renewable Energy Standard and Tariff (REST), instead of using Renewable Energy Certificates (RECs). CRS is a nonprofit organization that creates policy and market solutions to advance sustainable energy and mitigate climate change.

CRS administers Green-e® Energy, the nation's leading independent certification and verification consumer protection program for renewable energy sold in the voluntary market. Green-e Energy certifies and verifies over two thirds of the U.S. voluntary renewable energy market and an even higher proportion of U.S. voluntary REC sales. CRS's role in this market is to protect the voluntary consumer against double counting and false claims, and ensure the purchaser of renewable energy that they are receiving all of the attributes of renewable energy generation that they were promised.

A Track and Record approach uses kWh from interconnected DG for REST compliance and will negatively impact the voluntary market for RECs in Arizona, as well as complicate utilities' REST compliance obligations. As I am sure you are aware, REST currently requires Arizona utilities to procure RECs for compliance obligations, not kWhs.¹ Without a corresponding change in the REST legislation, utilities will be unable to use kWh from interconnected DG facilities for REST compliance.

Enabling utilities to use kWh from customer DG facilities instead of RECs for REST purposes would effectively destroy the market for voluntary RECs from DG in Arizona, and may prevent such RECs' access to other RPS markets as well. The Arizona voluntary REC market is thriving, in large part because the owners of DG facilities are able to claim the RECs produced from the renewable energy and sell them in either the voluntary or the compliance market. In 2010, Arizona had approximately 3,200 residential customers and 80 non-residential customers purchase renewable energy in the voluntary market, and Arizona renewable generators generated nearly 28,000 MWh that were sold into the voluntary REC market.²

WREGIS and Independent REC certification organizations like Green-e Energy require that RECs be fully aggregated, and that none of the attributes of renewable energy generation have been stripped, sold

¹ See *Renewable Energy Standard and Tariff*, §R14-2-1805, available at <http://www.azcc.gov/divisions/utilities/electric/res.pdf>.

² Data collected from Green-e Energy Verification 2010.

separately, or double counted. Under the Track and Record approach kWh from the renewable DG facility are effectively credited to the utility company for REST compliance. Use of the renewable kWh to meet or determine a compliance obligation renders the DG customer's REC effectively taken and used by the utility. Unless the utility purchased or otherwise contractually received the REC, the utility would be double counting the REC that rightfully belongs to the DG owner, resulting in the DG owner being unable to sell their REC into the voluntary market or, potentially, other states' RPS markets. If any Arizona DG owners are tracking their RECs in WREGIS, selling their RECs would be in violation of the WREGIS Terms of Use, which require all RECs tracked in the system to be fully bundled and not have attributes counted or claimed elsewhere.

A similar proposal was adopted in Hawaii with devastating effects on the voluntary market for DG RECs.³ When Hawaii modified its RPS eligibility rules to count all customer-sited, grid-connected renewable generation toward the state's RPS goal, Green-e Energy disallowed RECs generated in Hawaii from participating in the program to prevent the double counting of the renewable attributes.⁴ This decision has effectively eliminated the opportunity for renewable generators in Hawaii to participate in the voluntary REC market, an outcome that would also affect Arizona DG customers should this proposal move forward.

Finally, using the Track and Record approach for REST compliance would create tremendous administrative complexity by requiring the utility to track, by sector, whether they are using kWhs or RECs to meet their REST targets. This creates an unnecessary administrative burden, both on Arizona utilities and the Commission and potentially exposes the Commission to Takings Clause challenges.

CRS encourages the Commission to reject the Track and Record approach to REST compliance, and to pursue alternative market mechanisms that would enable utilities to purchase and aggregate RECs from DG to count towards REST compliance. Solutions such as a standard offer to DG customers for their RECs or using REC brokers to help aggregate DG RECs for sale to utilities will maintain the stability of the existing voluntary REC market, and avoid unnecessary expense and uncertainty associated with a radical change to REST eligibility and compliance.

CRS believes that this market based approach is the best option, however if this option is not viable there may be another option that would retain viability of the voluntary REC market, thereby allowing Arizona generators to sell RECs out of state. It may be possible to craft a compliance obligation waiver that preserved the value and ownership of the REC. Such a policy would need to be carefully constructed, applied and enforced such that the waiver was not dependent on renewable kWh of generation by DG facilities. Further, the Commission and utilities would need to be very clear that the utilities are not meeting their REST obligations. CRS strongly recommends that for whatever compliance amount of DG RECs are waived, that an equal amount of replacement Arizona solar RECs be attained. Replacing the DG RECs previously required under the REST will have the impact of reducing the likelihood of confusion as to the amount of renewable kWh actually delivered to Arizona customers.

³ See *Green-e Energy National Standard*, Center for Resource Solutions, 22 (2011). Available at: http://www.green-e.org/docs/energy/Appendix%20D_Green-e%20Energy%20National%20Standard.pdf.

⁴ *Id.*

CRS urges the Commission to consider the impact of the Track and Record proposal on Arizona renewable energy generators and customers and to ensure that the renewable energy industry continues to thrive in Arizona. Thank you for accepting and considering our input. Please do not hesitate to contact us should you have questions regarding the Green-e Energy program or the impact of this proposal on the voluntary renewable energy market in Arizona.

Sincerely,



Robin Quarrier
Counsel

Center for Resource Solutions
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BEFORE THE ARIZONA CORPORATION COMMISSION

DOCKET NO. E-01345A-12-0290

DOCKET NO. E-01345A-10-0394

DOCKET NO. E-01933A-12-0296

DOCKET NO. E-04204A-12-0297

Direct Testimony of Cynthia J. Córdova

On Behalf of

The Department of Defense and All Other Federal Executive Agencies

Track and Record Renewable Energy Certificates Proposal

April 24, 2013



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1 **I. INTRODUCTION**

2
3 **Q. Please state your name, employer, and business address.**

4 A. Cynthia Córdova, Department of Veterans Affairs (VA), 810 Vermont Avenue NW,
5 Washington, D.C. 20420.
6

7 **Q. What is your role at the VA?**

8 A. I am the director of the Green Management Program – the office within VA responsible
9 for all Department level sustainability and environmental programs.
10

11 **Q. What is your education and professional experience?**

12 A. I earned a bachelor's degree in economics from the University of Michigan in 1981 and a
13 joint master of science degree in industrial administration and public policy and
14 management from Carnegie Mellon University in 1987. I served as Vice President,
15 Market Development and held various other positions at the American Gas Association,
16 provided energy consulting services to public and private sector clients at several energy
17 and economic consulting firms, and was a market analyst at Washington Gas, a natural
18 gas distribution company.
19

20 **Q. What is the purpose of your testimony?**

21 A. The purpose of my testimony is to explain the potential impact of "Track and Record" on
22 VA and its mission to serve our nation's Veterans, and to propose alternatives that could
23 meet the needs of Arizona utilities and the Department, while furthering the goals of the
24 Commission.
25

26 **II. BACKGROUND**

27
28 **Q. Why has VA become a distributed generator?**

29 A. In 2005 Congress passed the Energy Policy Act of 2005. This Act created requirements
30 for Federal agencies to derive a certain percentage of their energy from renewable
31 sources. Executive Order (EO) 13423 § 2(b), signed in 2007, requires that at least half of

1 that required renewable energy come from new renewable energy sources, and that to the
2 extent feasible, come from generation sources on Federally owned property. The
3 implementation instructions for EO 13423 state that where possible, agencies should rely
4 on distributed generation (DG). This is a particularly salient point for VA, because as a
5 healthcare provider, energy reliability and security are critical to its mission. As a result,
6 VA made significant investments in solar projects in Arizona.
7

8 **Q. What kind of renewable energy investments has VA made in Arizona?**

9 A. VA has made a considerable investment in renewable energy at its facilities in Arizona.
10 In total, at its sites in Phoenix, Prescott, and Tucson, VA has invested over \$50 million,
11 and built over 10.6 MW of capacity, with future investments planned. These investments
12 were paid for completely with VA funds.
13

14 **III. DEPARTMENT'S POSITION ON "TRACK AND RECORD"**
15

16 **Q. What are VA's concerns with "Track and Record?"**

17 A. As originally proposed, "Track and Record" deprives VA of its ability to sell or claim
18 solar generation from its own facilities. Under EO 13423, Federal facilities are required
19 to own renewable energy attributes to meet renewable energy and greenhouse gas
20 reduction goals. Pursuant to the Department of Energy's *Renewable Energy Requirement*
21 *Guidance for EPACT 2005 and Executive Order 13423*, Federal agencies may not retain
22 credit for Renewable Energy Certificates (RECs) if they are counted towards another
23 entity's renewable energy requirements. Under the "Track and Record" proposal, certain
24 Arizona electric utilities (Affected Utilities) would claim VA's generated RECs towards
25 their Annual Renewable Energy Requirement. Thus, VA would be unable to use its RECs
26 to meet Federal mandates. From VA's perspective, this plan would invalidate the
27 viability of the REC system and would set a dangerous precedent if approved. VA's
28 renewable energy investments in Arizona would be devalued, and the policy will deter
29 future renewable energy investments in the State of Arizona.
30

1 VA's solar projects and other energy projects help meet policy mandates, further the
2 mission of caring for Veterans, and save taxpayer money that can be used in other aspects
3 of its operations. "Track and Record" would require VA to divert resources away from
4 other priorities to new energy projects that satisfy these policy mandates.
5

6 **Q. Does VA have any concerns with the testimonies provided by Mr. Gregory L.**
7 **Bernosky on behalf of Arizona Public Service Company, and that provided by Mr.**
8 **Carmine Tilghman on behalf of Tucson Electric Power Company and UNS Electric,**
9 **Inc.?**

10 **A.** Yes it does. The companies represented in the testimonies asked the Commission to
11 waive the Distributed Renewable Energy Requirement (DRER). VA applauds the
12 Commission's effort in promoting renewable energy in Arizona, and believes that
13 waiving the DRER will discourage the growth of distributed renewable energy
14 production in Arizona. VA suggests that Affected Utilities purchase the RECs needed to
15 comply with the DRER. This will ensure appropriate compensation to the current REC
16 owner and uphold the integrity of the REC system, while appropriately incentivizing
17 further investment in renewable energy generation in the Affected Utilities' service
18 territories.
19

20 **Q. Does VA have any other concerns with the testimonies?**

21 **A.** VA is concerned by the alternatives proposed within the testimonies. VA is concerned
22 with Mr. Bernosky's response to the question "[w]hat alternatives did APS consider?"
23 Mr. Bernosky responded that "[o]ne solution involved keeping APS's DE requirements
24 and simply requiring that customers surrender their RECs in exchange for
25 interconnecting to APS's system." *Testimony of Gregory L. Bernosky, page 9, lines 11-*
26 *13.* VA believes that this solution would not only deprive VA of the value of its RECs for
27 all the reasons listed above, but also runs counter to the Customer Rights and
28 Responsibilities as described in the "Interconnection Document," adopted by the
29 Commission as an interim guide until final rules are published. *Docket No. E-0000A-99-*
30 *043, Decision No. 69674.* The Interconnection Document states that "[a] Customer has
31 the right to interconnect a Generating Facility" and "[a] Utility is obligated to

1 interconnect Generating Facilities” That right and obligation, as described in the
2 preceding quote, does not involve a Customer being required to surrender or otherwise
3 lose the sole benefit of their RECs as part of the interconnection process. Thus, by
4 demanding VA, and those entities similarly situated, to relinquish ownership of its RECs
5 in exchange for an interconnection agreement, APS’s proposed solution is anything but a
6 viable solution. Mr. Tilghman proposed a similar alternative, but only in regards to net-
7 metering agreements. *Testimony of Carmine Tilghman, page 8, lines 1-5.* VA believes
8 such a rule would disincentivize DG, and would preclude VA from utilizing net-metering
9 in the future.

10
11 Additionally, both Mr. Tilghman and Mr. Bernosky propose a “track and reduce” type
12 alternative. *Testimony of Tilghman, page 8, lines 8-9; Testimony of Bernosky, page 9,*
13 *lines 22-25.* VA believes this proposed solution is unacceptable, and would amount to a
14 form of double counting that would unfairly and unjustifiably deprive VA of the value
15 and benefit of its RECs, and adversely affect VA and other entities’ efforts to achieve
16 renewable energy mandates and objectives.

17
18 **Q. Does that conclude your direct testimony?**

19 **A.** Yes it does. Thank you.

BEFORE THE ARIZONA CORPORATION COMMISSION

DOCKET NO. E-01345A-12-0290

DOCKET NO. E-01345A-10-0394

DOCKET NO. E-01933A-12-0296

DOCKET NO. E-04204A-12-0297

Corrected Surrebuttal Testimony of Cynthia J. Cordova

On Behalf of

The Department of Defense and All Other Federal Executive Agencies

Track and Record Renewable Energy Credits Proposal

May 28, 2013



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I. Introduction.....1

II. Surrebuttal to TEP and UNS.....1

1 I. INTRODUCTION.

2
3 Q. Please state your name, employer, and business address.

4 A. Cynthia Córdova, Department of Veterans Affairs (VA), 810 Vermont Avenue NW,
5 Washington, D.C. 20420.
6

7 Q. Did you file Direct Testimony in this proceeding?

8 A. Yes.
9

10 Q. What is the purpose of your Surrebuttal Testimony?

11 A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of
12 Carmine Tilghman on behalf of Tucson Electric Power Company (TEP) and UNS
13 Electric, Inc.
14

15 II. SURREBUTTAL TO TEP AND UNS.
16

17 Q. Does the "Track and Monitor" plan supported by Mr. Tilghman in his Rebuttal
18 Testimony alleviate VA's concerns with Renewable Energy Certificate ownership
19 and double counting?
20

21 A. It does not. "Track and Monitor" (T&M), as proposed by Arizona Corporation
22 Commission Staff Robert Gray, supposedly differs from "Track and Record" (T&R)
23 because under T&M "no credit is taken for those systems that are 'monitored'"¹
24 This difference is critical, but is far from clear. In his Rebuttal testimony, Mr. Tilghman
25 describes T&M as "almost identical to the Track and Reduce mechanism"² He also
26 states that T&M "would reduce the utilities' percentage requirement by the amount of
27 renewable energy interconnected to their systems – and allow the utilities to meet the
28 *remaining* RES percentage requirement through the use of the other eligible renewable
29 energy sources"³ (emphasis added). It is not clear whether T&M is merely another form
30 of T&R, or whether T&M unequivocally changes the REST rules. Accordingly, it is
31 unclear whether T&M would induce a double counting situation.
32

33 Q. How could T&M induce a double counting situation?
34

35 A. So long as the 15% REST requirement and the 4.5% distributed generation requirement
36 remain in place, there is the potential that even the monitoring for "informational
37 purposes" proposed under T&M would be considered a form of counting for compliance.

¹ Rebuttal Testimony of Carmine Tilghman on Behalf of Tucson Electric Power and UNS Electric, May 8, 2013, page 12:8-11.

² *Id.* at 7:7-8.

³ *Id.* at 8:8-11.

1 As proposed, T&M would use the kWhs produced by distributed generators to comply
2 with the REST rules. Under T&M, utilities would report the kWhs for which they own
3 the RECs for compliance purposes, and would report the kWhs for which they do not
4 own the RECs for "informational purposes." However, the renewable energy
5 requirement within Arizona's REST would remain at 15%, and the distributed renewable
6 energy requirement would remain at 4.5%. Utilities would be found in compliance with
7 the REST rules if, within their service territories, the requirements were met by total
8 generation, even where the utility did not own the RECs associated with that generation.
9 The kWhs produced by the customers used to meet the REST rules, either in the form of
10 direct compliance, or in the form of reducing the compliance burden on the utilities, are
11 thus counted, the associated RECs could not be used by the customer for any commercial
12 or compliance purpose without encountering a double counting problem, and customers
13 would be deprived of a significant portion of the investment they have made in renewable
14 energy.
15

16
17 **Q. Does VA agree with Mr. Tilghman's implication that Arizona's distributed**
18 **generation carve out has had, and will have, little impact on VA's investment in**
19 **distributed generation in Arizona?**
20

21 A. Not exactly. In his testimony, Mr. Tilghman correctly stated that VA made its
22 investments in distributed renewable energy "irrespective of the Company's DG
23 [distributed generation] Requirement"⁴ He concludes that because VA did not rely
24 on Arizona utility incentives, that distributed renewable energy growth would not be
25 affected by any DG requirement. Let me first reiterate that the purpose of my testimony,
26 and VA's prime concern in this matter, is protecting the integrity of its RECs. That said,
27 Mr. Tilghman's conclusion misses the mark in two ways. First, by implying that
28 renewable and distributed generation incentives and mandates had no effect on VA's
29 investment, Mr. Tilghman ignores the multiple federal mandates and incentives that
30 spurred VA to make its investments. State incentives and carve-outs have not, to this
31 point, affected VA, but it does not follow that they have not affected DG growth in
32 Arizona. Second, the changes to the REST rules endorsed by Mr. Tilghman on behalf of
33 TEP and UNS threaten the integrity of RECs, and thus threaten future investment by VA.
34

35 **Q. Can you please explain the statement from your Direct Testimony that utilities**
36 **continue to purchase RECs to meet the Distributed Renewable Energy**
37 **Requirement?**
38

⁴ Rebuttal Testimony of Carmine Tilghman, page 11:24-26.

1 A. In my Direct Testimony I stated that Affected Utilities could purchase the RECs they
2 need to meet the REST rules. This proposal protects the integrity of RECs, and properly
3 compensates REC holders for their investment. However, it is not VA's role or intent to
4 recommend Arizona law or policy, only to protect the value of its investment. VA would
5 be amicable to other solutions that do not create double counting situations.
6

7 **Q. Does this conclude your testimony?**
8

9 A. Yes it does. Thank you for the opportunity to testify before the Commission.
10
11
12
13
14
15



BEFORE THE ARIZONA CORPORATION COMMISSION

DOCKET NO. E-01345A-12-0290

DOCKET NO. E-01345A-10-0394

DOCKET NO. E-01933A-12-0296

DOCKET NO. E-04204A-12-0297

Direct Testimony of Kathy Ahsing, P.E.

On Behalf of

The Department of Defense and All Other Federal Executive Agencies

Track and Record Renewable Energy Certificates Proposal

April 24, 2013

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1 **I. INTRODUCTION**

3 **Q. PLEASE STATE YOUR NAME AND PLACE OF WORK.**

4 A. Kathy Ahsing, 2530 Crystal Drive, Arlington VA 22202.

5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am employed by the U.S. Department of the Army. I currently serve as the Director of
7 Planning and Development for the Energy Initiatives Task Force (EITF) in the Office of the
8 Assistant Secretary of the Army for Installations, Energy and Environment.

9 **Q. PLEASE DESCRIBE YOUR BACKGROUND AND WORK EXPERIENCE.**

10 In Sept 2011, I was designated Director for Planning and Development for the EITF, responsible
11 for the identification and analysis of large scale renewable energy opportunities, and the
12 management of the Army's large scale renewable energy project pipeline.

13 Prior to this position, I served as the Executive Strategic Initiatives Advisor to the Assistant
14 Chief of Staff for Installation Management and Commander Installation Command working on a
15 wide range of issues related to the organization and managerial policies, practices, and
16 procedures governing Installation Management programs for more than one hundred and fifty
17 Army installations across the country.

18 I have 30 years of service as a government employee with extensive knowledge of the
19 Department of Defense, Army installation management, organizational performance, and
20 program/project management. I have held leadership positions at various levels of the Army's
21 Installation Command leading business transformation and organizational performance efforts at
22 headquarters and various regions. I have been responsible for oversight of facilities and
23 construction programs with the Deputy Chief of Staff for Engineering at U.S. Army Pacific and
24 oversight of information management operations for U.S. Army Garrison Hawaii. I have also
25 served as a program/project manager with the U.S. Army Corps of Engineers.

26 I am a licensed professional engineer in the State of Hawaii. I hold an M.S in Resourcing
27 National Security Strategy from the Industrial College of the Armed Forces, and a B.S. in Civil
28 Engineering from University of Hawaii.

29 **Q. WHAT IS THE EITF?**

30 A. The EITF was established by the Secretary of the Army on Sept. 15, 2011, to serve as the
31 central management office for partnering with Army installations, to implement cost-effective,
32 large-scale renewable energy projects, leveraging private sector financing. The task force
33 focuses on wind, solar, biomass, and geothermal large-scale renewable energy projects that are

1 10 megawatts or greater located on Army installations in the United States. Currently, the EITF
2 is evaluating potential renewable energy project opportunities in Arizona, including at Fort
3 Huachuca and Yuma Proving Ground (YPG).

4 5 **II. BACKGROUND**

6 **Q. WHAT IS THE CURRENT STATUS OF ARMY OPERATIONS, GENERALLY?**

7 A. The United States remains a Nation at war. Army installations, such as Fort Huachuca and
8 YPG, support our Soldiers through critical missions to train, equip, mobilize, deploy, recover and
9 reset our forces. In 2012, we continued the repositioning of over 40% of our combat units by
10 reassigning significant force structure from Europe to the U.S., while simultaneously executing a
11 Base Realignment and Closure (BRAC) program, whose most recent actions were initiated in
12 2005. As a result, the population of Soldiers and Families on our installations is growing and
13 many of our remaining missions are being run from U.S. installations.

14 **Q. WHAT IS THE CURRENT STATUS OF ARMY OPERATION IN ARIZONA?**

15 A. There are several military bases in Arizona. The Air Force operates the Barry M. Goldwater
16 Range, Davis-Monthan Air Force Base, and Luke Air Force Base. The Navy operates Marine
17 Corps Air Station Yuma. The Army operates Fort Huachuca and YPG. The Arizona National
18 Guard operates Camp Navajo as a National Guard training site and munitions storage depot.

19 Fort Huachuca is a major Army communications and intelligence center. It is home to the Army
20 Intelligence Center, the Army Information Systems Command, and the Joint Interoperability
21 Test Command. Also at Fort Huachuca are field test facilities and test ranges for
22 communications systems and equipment, including an electronic proving ground complex,
23 associated with White Sands Missile Range, New Mexico, and Aberdeen Proving Ground,
24 Maryland. Fort Huachuca has a population of 6,222 active duty soldiers, 7,434 family members
25 and 4,394 civilians, supporting these critical missions.

26 YPG is one of the largest military installations in the world, covering over 1300 square miles.
27 YPG's mission is to serve as a test facility for the Army. YPG manages testing in three different
28 environmental extremes; desert (Yuma Test Center), tropic (Tropic Regions Test Center), and
29 cold (Cold Regions Test Center). The large acreage allows for testing of a huge variety of
30 weapon systems and munitions including: long range artillery; missile firing aircraft; cargo and
31 personnel parachutes; direct fire weapons; unmanned aerial systems; technologies to defeat
32 roadside bombs. Additionally, YPG has a population of 1,771 active duty soldiers and civilians.

1 Q. HOW ARE ENERGY PRIORITIES IN THE ARMY SHIFTING?

2 A. The Army is a major energy customer and along with the rest of the Department of Defense
3 make up approximately 80% of the federal government expenditures on energy. In fact, the
4 Army spends nearly \$5 billion dollars a year on all energy costs. While much of that is for fuel,
5 the Army is the largest facilities energy user in the federal government.

6 What these numbers do not show, however, is the way that the Army uses energy, and its energy
7 intensity is changing. Today's military installations are playing an increasing role in testing and
8 training, and also in theater operations. Additionally, military installations are playing an
9 increased role in disaster relief as we saw from Hurricane Sandy that hit the east coast this past
10 fall. The Army's ability to accomplish our mission on a global scale depends on secure,
11 uninterrupted access to power and energy.

12 All of this has created increased demand for energy on our US installations and resulted in an
13 enhanced vulnerability for the Army. The installations on which soldiers live and train are almost
14 completely dependent on commercial power grids. These grids can be disrupted by weather,
15 nature and acts of terrorism. Layer on top of this the financial risk posed by volatile energy
16 markets and uncertain future fuel supply, and energy reliance becomes a key area of risk to the
17 Army.

**18 Q. HOW HAS THE ARMY RESPONDED TO THESE THREATS TO ENERGY
19 SECURITY?**

20 A. Ensuring that Army installations have the ability to perform their mission in the face of the
21 threats to energy security is a top priority for the Army. This priority is reflected in the Army's
22 highest level strategic planning document, the Army Campaign Plan, with an objective to
23 Adapt/Execute Installation Energy Security and Sustainability Strategies. This objective is
24 overseen by the Army's Senior Energy and Sustainability Council (SESC). The SESC tracks the
25 Army's progress on the goals, tasks and metrics to improve energy security by (1) reducing
26 energy consumption, (2) increasing energy efficiency, (3) increasing use of renewable/alternative
27 energy, (4) assuring access to sufficient energy supplies and (5) reducing adverse impacts on the
28 environment.

**29 Q. WHAT IS THE ROLE OF RENEWABLE ENERGY IN THE ARMY'S ENERGY
30 SECURITY STRATEGY?**

31 A. Rather than pursuing purchases of renewable energy from off-installation sources, the Army
32 focuses on implementing on-site energy conservation and energy efficiency measures and
33 increasing renewable energy production to provide enhanced energy security to our installations.
34 The Army has made renewable energy a key component to meet this objective, and it, as well as
35 the Navy and Air Force, have each set an ambitious goal for deploying one gigawatt (GW) of
36 renewable energy by 2025.

1 To address these challenges and fulfill statutory requirements during these times of fiscal
2 constraint, the Army must increase efforts to leverage private sector investments in energy
3 projects. In FY12, the Army contracted for or began installation on 16.3 MW of new renewable
4 electrical capacity nationally, 14.1 MW from privately financed projects. These projects
5 included awarding the largest PV solar project in the Army with 4.1 MW at White Sands Missile
6 Range and a total of 11 MW of renewable energy generation including major projects at Fort
7 Bliss, Texas, and Fort Buchanan, Puerto Rico.

8 A key part of the Army's strategy for installation renewable energy projects is that they address
9 energy security requirements for the installation. This means that at a minimum, the switch must
10 be on the installation's side of the meter in the event of grid outage. Consistent with the long
11 term vision, they also must be compatible with storage and microgrid technologies, as they
12 become available.

13 **Q. ARE THERE STATUTORY OR OTHER REQUIREMENTS FOR THE ARMY TO**
14 **INCREASE ITS RENEWABLE ENERGY USE?**

15 A. In addition to improving energy security, the Army must meet the requirements of numerous
16 federal statutes and executive orders that require reductions in our energy consumption and
17 greenhouse gas (GHG) emissions and set targets for renewable energy production. The Army
18 must strive to attain the energy targets outlined in the Energy Policy Act of 2005 (EPAct 2005),
19 which requires 7.5 percent of the total electricity consumed by the federal government shall
20 come from renewable energy sources by fiscal year (FY) 2013. Under Executive Order 13423, at
21 least 50 percent of the renewable energy used must come from "new renewable sources" placed
22 in service after January 1, 1999. The National Defense Authorization Act of 2007 also requires
23 that 25 percent of the U.S. Department of Defense's (DoD's) total electric energy consumption
24 come from renewable sources by 2025.

25 **Q. WHAT SPECIFIC RENEWABLE ENERGY GOALS HAS THE ARMY SET?**

26 The Army has committed to deploy one GW of renewable power generation on Army
27 installations by 2025. However, for large projects, the Army will not own the generation assets
28 and must leverage private sector investments. Installations will continue to develop smaller scale
29 projects to meet their goals for energy efficiency and renewable energy implementation.

30 **Q. HOW DOES THE EITF EVALUATE RENEWABLE ENRERGY PROJECTS?**

31 The EITF employs an enterprise wide approach to developing a project portfolio. The EITF
32 implements a rigorous five phase analysis to identify potential projects and then transition them
33 from planning through execution. Each project opportunity in the EITF's pipeline is measured
34 against eight different factors including specific installation mission and energy security
35 requirements, the project's economic viability, regulatory compliance, and integration into the

1 distribution grid. During the planning phase, projects can be delayed or advanced due to
2 market conditions, regulatory hurdles, or technical obstacles.

3 **Q. IS THE ARMY LOOKING TO DEVELOP RENEWABLE ENERGY PROJECTS IN**
4 **ARIZONA?**

5 A. The Army is planning solar energy projects in Arizona at Fort Huachuca in Tucson Electric
6 Power (TEP) territory and at Yuma Proving Ground in Arizona Public Service (APS) Company
7 territory. Arizona offers one of the best locations in the U.S. for solar energy projects due to the
8 abundant solar insolation. The Army is eager to tap this rich resource as a means of expanding its
9 renewable energy portfolio and progressing towards the federal mandates for renewable energy
10 set forth in EAct 2005 and the NDAA.

11
12 **III. RENEWABLE ENERGY CREDITS**

13 **Q. WHAT IS THE ROLE OF RENEWABLE ENERGY CREDITS (RECs) IN MEETING**
14 **THE ARMY'S RENEWABLE ENERGY REQUIREMENTS?**

15 A. RECs are not required for the Army to meet the NDAA goal of 25% of the Army's energy
16 coming from renewable sources. That goal requires the Army to produce or procure 25% of its
17 energy from renewable energy resources, but retaining RECs is not necessary for compliance.
18 RECs are required to meet the renewable energy mandates outlined in both EAct 2005 and
19 EO13423. EAct requires that in FY2013 and beyond, 7.5% of the Army's energy come from
20 renewable sources, while EO 13423 requires that at least half of renewable energy used by the
21 federal government must come from "new" renewable sources in service after January 1, 1999.
22 Per EAct and the EO, RECs must be retained by the Army to meet either of these goals.
23 Retention of a REC means the Army retains or precludes transfer to other parties of all
24 renewable energy and non-energy attributes of the project, and it is the best evidence of meeting
25 these standards.

26 The Department of Energy established these goals to expand federal renewable energy use under
27 EAct 2005 and EO13423 beyond the existing state renewable portfolio standard (RPS) goals.
28 This is to prevent federal agencies from claiming credit for renewable energy attributes that are
29 also claimed by other parties such as states or corporations. Therefore, federal agencies are
30 required to retain ownership of the RECs in order to count them towards the EAct 2005 or EO
31 13423 requirements.

32 **Q. WHAT IS THE RELATIONSHIP OF RENEWABLE PORTFOLIO STANDARDS**
33 **AND RECs?**

34 A. A RPS usually requires utilities to generate a certain portion of energy from renewable
35 sources. RECs are a "renewable attribute" of electricity, and represent one megawatt-hour of

1 energy. The RECs can be sold separately from the electricity and the value of a REC is
2 determined by the market subject to supply and demand constraints. RECs can be sold to
3 electrical utilities needing to meet their mandatory RPS requirements. In states without a RPS,
4 projects can generate RECs for sale in voluntary markets, however, these RECs are typically
5 valued far less. Assessing the immediate and long-term value of any RECs is an important part
6 of the policy and financial analysis of any potential renewable energy project.

7 **Q. HOW ARE RECs IMPORTANT TO THE ARMY?**

8 A. RECs play a critical role in the Army's program to make renewable energy development
9 economically attractive to private developers and for ensuring Army compliance with its EPAct
10 2005 and EO 13423 requirements.

11 The Army has a stated policy that it will no longer be a purchaser of RECs on the open market to
12 meet EPAct 2005 and EO 13423 goals. When the Army pays to build a project, the Army wants
13 to retain the RECs to support compliance with these goals. For projects developed on Army land
14 using private financing, it is the Army's preference to retain some or all of the RECs. However,
15 the Army recognizes that an inflexible requirement that it retain all RECs would make many
16 renewable energy projects financially unviable. RECs play a key role in helping such developers
17 to secure private financing by providing a potential extra source of revenue from the sale of the
18 RECs.

19 While the Army prefers to retain ownership of RECs whenever possible, due to the current rate
20 structures and electricity costs in Arizona, the Army will likely utilize the RECs associated with
21 projects on its land to attract project developers. Without RECs, these projects will become
22 untenable, and the Army will be forced to look elsewhere for its renewable energy projects.

23 **Q. WILL THE ARMY KEEP ALL OF THE RECs WITH A PROJECT?**

24 A. Not necessarily. Where the cost to produce renewable energy is higher than the cost to
25 produce conventional energy, the value of RECs will be a critical component of the economic
26 viability of potential renewable energy projects. Generally, if the compliance price is
27 significantly greater than voluntary prices, then it is worth considering a REC sale by the
28 renewable developer. This sale would translate into savings by the Army in a long-term power
29 purchase contract, making the price for renewable energy more cost competitive with
30 conventional energy. The Army will evaluate each project on individual economics and make a
31 decision in the best interest of meeting the Army's energy security goals.

32 **Q. ARE THERE ANY EXAMPLES OF HOW THE ARMY HAS USED RECS TO MAKE**
33 **PROJECTS ECONOMICALLY VIABLE?**

1 A. In the Energy Saving Performance Contract at Fort Bliss (114kW solar arrays at the ranges),
2 the RECs generated remain with El Paso Electric. Fort Bliss gets none of these RECs, and they
3 are used to make the system viable and are part of the positive cash flow equation.

4 **Q. ANY OTHERS?**

5 A. For the 2 MW PV array at Fort Carson, the RECs were sold to Xcel Energy per a 20 year
6 contract. This allowed Fort Carson to get a fixed, non-escalating energy rate for 17-years with a
7 three year option.

8 **Q. WHAT ROLE WILL RECs HAVE AT ANY RENEWABLE ENERGY PROJECTS**
9 **AT FORT HUACHUCA OR YPG?**

10 A. At a number of Army base locations, including those in Arizona, the cost of electricity is such
11 that if a solar project was built and electricity was charged at that current rate, the project would
12 not be economically feasible. Adding the RECs to the revenue stream for the project helps the
13 developer be competitive with a low electricity rate and helps the project become more
14 financially attractive for the developer.

15 RECs are vital to the viability of potential renewable energy projects the Army is considering at
16 Fort Huachuca and YPG. The RECs enable the Army to work with private developers on
17 projects by providing a source of revenue from the RECs, which should increase the likelihood
18 that the projects are financially attractive. One of the key goals defining the economic viability
19 of a project is whether the Army can reduce or stabilize costs for the lifecycle of the renewable
20 energy project. RECs make this a possibility in Arizona. Without RECs, the projects will not be
21 as feasible and the Army may need look to other locations where projects are supported by
22 RECs.

23
24 **IV. TRACK AND RECORD PROPOSALS**

25 **Q. HOW WOULD THE INITIAL TRACK AND RECORD PROPOSAL AFFECT ARMY**
26 **PROJECTS?**

27 A. The initial Track and Record proposal would interfere with the Army's ability to comply
28 with federal mandates requiring DoD to obtain a certain amount of RECs each year. Specifically,
29 the Army would not be able to use Arizona RECs to meet the EPAct 2005 and the EO 13423
30 requirements. Both these mandates require RECs for compliance. Since the Army, by policy,
31 does not purchase RECs on the open market, the only way the Army can meet these mandates is
32 with the retention of RECs associated with renewable energy projects on Army land.

1 Additionally, the initial Track and Record proposal presented a potential negative impact to
2 making renewable project economically viable. The distributed energy (DE)¹ carve-out allows
3 for a REC price to accommodate the higher renewable energy development costs. The initial
4 Track and Record proposal presented a situation where the utilities would automatically receive
5 the RECs for all projects interconnected to their systems, without payment or consideration to
6 the developer, negating any potential value private developers would see from RECs. For
7 example, a photovoltaic (PV) project costing \$0.08/KWh at an installation currently paying
8 \$0.06 for conventional electricity would need RECs of \$0.02/KWh, retained by the private
9 developer, to make the project economically viable. Even if the price for RECs continued to
10 decrease, the value of RECs, driven by current Arizona market conditions, would help support
11 making Army renewable energy projects economically viable.

12 **Q. CAN YOU BE MORE SPECIFIC?**

13 A. The REST requires utilities to source 15% of their energy portfolios from renewable sources
14 by 2025, with 30% of the total 15% coming from DE. The Track and Record proposal would
15 allow APS or TEP to comply with the REST by tracking and recording all distributed energy
16 (DE) production that is interconnected within its service territory, regardless of REC ownership.
17 The federal government cannot use "double counted" RECs to meet EPC Act 2005 or and EO
18 13423 mandates. Pursuant to U.S. Department of Energy (DOE) guidance, allowing the
19 renewable energy aspect of the project to be counted by APS or TEP toward the REST would
20 make RECs, even if retained by the Army, ineligible to contribute to the Army's federal
21 requirements. For these reason, DoD opposed the Track and Record proposal as stated in its
22 comment letters to the ACC dated January 17, 2013.

23 **Q. HAVE YOU EVALUATED THE UTILITIES CURRENT ALTERNATIVE**
24 **PROPOSAL TO ELIMINATE THE EXISTING DISTRIBUTED ENERGY**
25 **REQUIREMENT?**

26 A. Yes. A proposal made by both APS and TEP in their separately filed Direct Testimony
27 provides for the removal of the DE "carve-out" without changing the overall 15% REST
28 requirement. This proposal would allow the utilities to track DE generation "for information
29 purposes only - not compliance purposes". This proposal would end the requirement that TEP
30 and APS satisfy 30% of their total RES requirement through DE but retain the obligation to serve
31 15% of its retail load with energy produced by renewable energy. According to APS, under this
32 proposal, utilities would be able to:

¹ TEP has defined Distributed Generation (DG) as electric generation sited at a customer premises, providing electric energy to the customer load on that site or providing wholesale capacity and energy to the local Utility Distribution Company for use by multiple customers. The generator size and transmission needs shall be such that the plant or associated transmission lines do not require a Certificate of Environmental Compatibility from the Arizona Corporation Commission (general anything up to 100MW). APS uses the term Distributed Energy (DE) to refer to residential or non-utility owned installations and the specific set asides provided in the REST. For purposes of this testimony, the terms DE and DG are considered synonyms and the term DE is used.

- Retire any DE RECs currently in its possession to meet REST
- Acquire new DE RECs to satisfy those obligations
- Have no further obligation to obtain and retire new DE RECs.

This proposal will likely negatively affect the value of RECs and viability of renewable energy projects in Arizona. This would then negatively impact the economic evaluation of renewable energy projects by EITF.

Q. HAVE YOU CONSIDERED OTHER ALTERNATIVES PUT FORWARD BY THE UTILITIES TO THE INITIAL TRACK AND RECORD PROPOSAL?

A. A second alternative proposal by TEP provides for eliminating the DE requirement from the REST and reducing the overall REST obligation. For example, the overall REST target would be reduced by the 30% DE requirement. The result would be that by 2025, the utilities would only need to serve 10.5% (the elimination of the 30% DE of the REST 15% goal would reduce the REST by 4.5% to 10.5%) of its retail load from renewable sources. The RECs in Arizona only have value on the open market as they are needed to meet the REST. If the REST is reduced, there will likely be negative impacts on the price of RECs and associated negative implications for renewable energy development in Arizona. The negative impacts are likely to be greater than those resulting from the utilities' alternative that eliminates the DE requirement but keeps the current REST unchanged.

Q. ARE THERE ANY OTHER PROPOSALS YOU EVALUATED?

Yes. A third alternative proposal by TEP maintained the DE requirements and required customers to surrender their RECs in exchange for interconnecting to a utility system. This proposal, as with the initial Track and Record proposal would result in a situation where REC values would be negated. This would prevent the Army from meeting federal mandates by developing projects in Arizona and market conditions from supporting renewable energy development in the state. For example, should TEP or ACS fund development of a project, they would retain the RECs under the proposed alternative. However, under this proposal, if a private developer were to fund a project on Army land that connected to the utility's system, the "credit" for renewable energy generation would be claimed by TEP or APS. This means the ability of the private developer to own the RECs and sell them to the utility to meet its REST targets would be eliminated, and make the RECs valueless for either Army goal compliance or project economics. Any additional proposals, such as the TEP Track and Reduce mechanism, that allow the utilities to claim RECs or track them for their compliance purposes have the same effect.

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A. Energy is very important to the Army, and the Army has a very specific strategy, programs, initiatives, and management oversight to ensure that the Army of today and tomorrow has the necessary access to energy to be effective in all anticipated scenarios both in the field and at home in our installations. Securing our installations with renewable energy is a key component of this strategy to meet federal mandates and provide diversified supply to our installations.

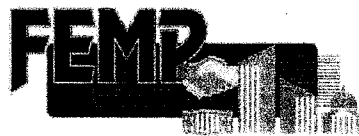
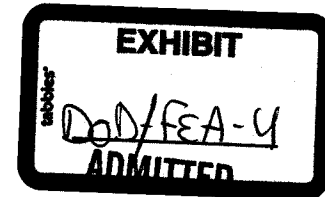
Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

Renewable Energy Requirement Guidance for EPACT 2005 and Executive Order 13423

Final

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**Federal Renewable Energy Requirement Guidance for EPACT
2005 and EO 13423
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Federal Renewable Energy Requirement Guidance Under EPACT 2005 and Executive Order 13423

1. Authority

The authority for this guidance is based on Section 203, FEDERAL PURCHASE REQUIREMENT of the Energy Policy Act of 2005 (42 U.S.C. 15852) and Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (72 FR 3919; January 24, 2007), and the instructions and guidance distributed by the Chairman of the Council for Environmental Quality for the implementation of the Executive Order.

1.1 Energy Policy Act of 2005

The Energy Policy Act of 2005 ("EPACT 2005;" Pub. L. 109-58) requires, in part, that the President, acting through the Secretary of Energy, shall seek to ensure that, to the extent economically feasible and technically practicable, of the total amount of electric energy the Federal government consumes during any fiscal year, the following amounts shall be renewable energy:

- a) Not less than 3 percent in fiscal years 2007 through 2009
- b) Not less than 5 percent in fiscal years 2010 through 2012
- c) Not less than 7.5 percent in fiscal year 2013 and each fiscal year thereafter

Section 203 (a) of EPACT 2005. (42 U.S.C. 15852(a))

1.2 Executive Order 13423

Executive Order (EO)13423 requires that agencies:

[E]nsure that (i) at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources, and (ii) to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.

1.3 Guidance

This guidance, promulgated by the Department of Energy's Federal Energy Management Program (FEMP), specifies the conditions for agencies to meet the EO13423 and the EPACT 2005 Requirements. Each agency should meet the EO13423 Requirement as well as the EPACT 2005 Requirement.

2. Definitions

2.1 Overview of Renewable Energy Sources and Conversion Factors

The EPACT 2005 and EO13423 Requirements will be based on the "total amount of electric energy the Federal government consumes during any fiscal year"¹ for all facilities, those subject to EPACT 2005 goals and excluded, domestic and international. This is consistent with Federal energy management requirements in Title V of the National Energy Conservation Policy Act ("NECPA"; Pub. L. 95-619), which specifically apply to Federal buildings, meaning: "any building, structure, or facility, or part thereof, including the associated energy consuming support systems, which is constructed, renovated, leased, or purchased in whole or in part for use by the Federal Government and which consumes energy; such term also means a collection of such buildings, structures, or facilities and the energy consuming support systems for such collection."²

For purposes of this guidance and reporting energy use under section 543 of NECPA³ and EO13423, small on-site, renewable energy generation projects that do not incur fuel costs, are un-metered, and are located on the customer side of a facility's energy meter impact purchased energy in the same manner as an energy conservation project. Therefore they will not be included in the total Btu per gross square foot calculations used for energy efficiency goals.

2.2. Renewable Energy Sources Qualified to Count Toward the EPACT 2005 and EO13423 Requirement

The following sections explain how EPACT 2005 and EO13423 Requirements apply to different types of renewable energy sources.

2.2.1 Renewable Energy Sources of Electricity Qualified to Count Toward the EPACT 2005 Requirement

Electric energy from all of the renewable energy sources that satisfy the definitions and qualifications explained in sections 2.2.3 through 2.2.13 may be counted towards the EPACT 2005 Requirement.

2.2.2 New Renewable Energy Sources Qualified to Count Towards the EO13423 Requirement

Electric energy from all of the renewable energy sources that satisfy the definitions and qualifications explained in sections 2.2.3 through 2.2.13 may be counted towards the EO13423 Requirement. Agencies may also count qualified non-electric energy from new renewable energy sources of the types detailed in sections 2.2.3 through 2.2.13. Examples include but are not limited to thermal energy from solar ventilation pre-heat systems, solar heating and cooling systems, solar water heating, ground source heat pumps, biomass heating and cooling, thermal uses of geothermal and ocean resources. Examples of mechanical energy include pumps driven by wind power and mechanical

¹ Section 203 (a) of EPACT 2005 (42 U.S.C. 15852(a))

² Section 8259 of NECPA (42 U.S.C. 8259(6))

³ Section 543(a)(1) of NECPA (42 U.S.C. 8253(a)(1))

applications of qualified hydro resources. Lighting examples include daylighting technologies.

2.2.2.1 New Renewable Energy Sources

In order for a renewable energy source, either electric or non-electric, to qualify as a new renewable energy source for the purpose of meeting the EO13423 Requirement, the renewable energy source must be placed into service after January 1, 1999.⁴

2.2.2.2 Conversion to Electric Energy Equivalent

Conversion of non-electric energy to an electric equivalent will be based on methods described in DOE's reporting guidance for the Annual Report on Federal Government Energy Management (www.eere.energy.gov/femp/about/reporting_guidance.html).

2.2.3 Biomass

Under the definition in section 203 of EPACT 2005, the term "biomass" means any lignin waste material that is segregated from other waste materials and is determined to be non-hazardous by the Administrator of the Environmental Protection Agency, and any solid, non-hazardous cellulosic material that is derived from the following:

- a) Any of the following forest-related resources: mill residues, precommercial thinnings, slash, and brush, or nonmerchantable material
- b) Solid wood waste materials, including waste pallets, crates, dunnage, manufacturing and construction wood wastes (other than pressure-treated, chemically treated, or painted wood wastes), and landscape or right-of-way tree trimmings, but not including municipal solid waste (garbage), gas derived from the bio-degradation of solid waste, or paper that is commonly recycled
- c) Agricultural wastes, including orchard tree crops, vineyard, grain, legumes, sugar, and other crop by-products or residues, and livestock waste nutrients
- d) A plant that is grown exclusively as a fuel for the production of electricity

Section 203 (b)(1) of EPACT 2005 (42 U.S.C. 15852(b)(1))

2.2.4 Waste to Energy

Municipal solid waste and refuse-derived fuels are included.

2.2.5 Landfill Gas

Landfill gas is the methane generated as waste decomposes. Wastewater treatment digester gas and other gas derived from the bio-degradation of waste also qualify under this category.

2.2.6 Geothermal Energy

This category includes electric energy from geothermal sources.

⁴ –Executive Order 13423, Sec. 9(g)

2.2.7 Solar Energy

Solar energy for production of electrical energy includes but is not limited to photovoltaics and concentrating solar power.

2.2.8 Ocean Energy

Ocean Energy includes but is not limited to electric energy from tidal, wave, current, and ocean thermal energy conversion (OTEC).

2.2.9 Hydropower

For the purpose of the EPACT 2005 requirement, hydropower energy qualifies as renewable energy if it is from new hydroelectric generation capacity achieved from increased efficiency or addition of new capacity at an existing hydroelectric project. Hydroelectric generation capacity is "new" if it was placed in service after January 1, 1999, consistent with the definition of new in EO13423.⁵

2.2.10 Hydrokinetic

Hydrokinetic energy technology extracts energy from moving water without relying on dams to create hydrostatic energy potential. Hydrokinetic energy is also known as 'run of river'. Hydrokinetic energy used as electricity qualifies as renewable energy for meeting the EPACT 2005 and EO13423 Requirement.⁶

2.2.11 Wind Energy

All sources of wind energy are included.

2.2.12 Renewable Energy Certificates or RECs From Qualifying Sources

Renewable Energy Certificates (RECs) -- also known as green tags, green energy certificates, renewable energy credits, or tradable renewable certificates, -- represent the technology and environmental (non-energy) attributes of energy generated from renewable sources.⁷ Renewable energy credits for electricity are usually sold in 1 megawatt-hour (MWh) units. A certificate can be sold separately from the mega-watt hour of generic electricity with which it is associated. This flexibility enables customers to offset a percentage of their annual energy use with certificates generated elsewhere. RECs provided to meet the requirements of this Guidance must come from sources that meet all requirements of this guidance. RECs from renewable sources of electricity defined in this section may be used to meet the EPACT 2005 Goal and EO13423 goal. RECS from "new" renewable sources of electricity may be used to meet the requirement of EO13423.

RECs from non-electric sources of renewable energy may also be used to meet the EO13423 Requirement concerning new sources of renewable energy. Their contribution will be reported under the EO13423 Requirement, but they cannot be used to meet the EPACT 2005 Requirement.

⁵ Executive Order 13423, Section 9(g)

⁶ March 29, 2007 Instructions for Implementing Executive Order 13423 at http://www.ofee.gov/eo/eo13423_instructions.pdf.

⁷ See EPA definition at www.epa.gov/greenpower/whatis/glossary.htm

2.2.13 Non-energy Attributes

Non-energy attributes of renewable energy include, but are not limited to, the following:

- a) any avoided emissions of pollutants to the air, soil, or water such as sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and mercury;
- b) any other pollutant that is now or may in the future be regulated under the pollution control laws of the United States; and
- c) avoided emissions of carbon dioxide (CO₂) and any other greenhouse gas, along with the RECs reporting rights to these avoided emissions.⁸

3. Requirements for Renewable Energy from Projects, Purchases, and RECs to Qualify as Federal Renewable Energy Consumption

3.1 Introduction

3.1.1 New Renewable Energy Requirement of EO13423

Section 2 (b) of EO13423 requires that at least half of the statutorily required renewable energy consumed by an agency in a fiscal year comes from new renewable sources. In practice this means that in any fiscal year, for purposes of compliance with EO13423, agencies can report the use of electricity from qualified renewable energy sources placed in service on or *before* January 1, 1999 to meet the following percentages of their total electricity use: 1.5% from 2007 to 2009, 2.5% from 2009 to 2013, and 3.75% from 2013 onward. They can meet the requirement for new sources by:

1. using electricity from qualified new renewable sources of electricity built after January 1, 1999 and/or
2. using non-electric energy from qualified new renewable sources built after January 1, 1999;

3.1.2 How the EO13423 Requirement Impacts the EPACT 2005 Goal

EO13423 requires that agencies use new renewable energy sources equal to half of the EPACT 2005 renewable energy requirement. While EPACT 2005 only allows **electricity** from renewable energy sources, EO13423 allows agencies to use new non-electric renewable energy sources to meet the requirement for new renewable energy. However, these non-electric renewable energy sources cannot be used to meet the EPACT 2005 requirement. The table below shows the differences between the two requirements.

⁸ Based on Bonneville Environmental Foundation public comments to ERT Uniform National Certification Standard for EcoPower RECs, submitted to DOE in support of BEF comments.

Comparison of EO13423 and EPACT 2005 Renewable Energy Goals

| | 2007-2009 | 2009-2012 | 2013 onward | Can include new non-electrical? | New or old source? |
|-------------------------------------------------------------------------|-----------|-----------|-------------|---------------------------------|---------------------|
| EO13423 <i>new</i> renewable energy sources <i>minimum</i> requirements | 1.5% | 2.5% | 3.75% | Yes | No, exclusively new |
| EPACT 2005 total minimum renewable energy requirements | 3% | 5% | 7.5% | No | Yes |

For example, using only electricity from renewable energy sources an agency can meet the EO13423 and EPACT 2005 requirement in 2008 with 1.5% of its electricity from new renewable energy sources of electricity and 1.5% from old renewable energy sources of electricity, for total renewable energy use of 3%. At the other extreme, in 2008 an agency could use new non-electric renewable energy sources equivalent to 1.5% of its electricity use to satisfy the EO13423 requirement, and then use only old renewable energy sources of electricity to meet 3% of its electricity use to satisfy the EPACT 2005 requirement, for a total of an equivalent of 4.5% of its electricity use from renewable energy. In between these extremes agencies can use any combination of new non-electric and electric renewable energy sources necessary to meet the EO13423 requirement.

These goals represent minimums only; agencies are encouraged to establish higher internal goals (see section 3.6). Once an agency has met EO13423's Requirement for new source renewable energy and EPACT 2005 Requirement for total renewable energy, agencies should report any amount of new or old renewable electricity consumption that exceeds the goal.

3.1.3 Consumption Requirement

Section 203 of EPACT 2005 specifies that renewable energy must be consumed to be credited toward the Requirement. (42 U.S.C. 15852(a)) The following paragraphs describe how projects and purchases qualify as consumed or used electricity in order to be counted toward the EPACT 2005 Requirement.

Non-electric renewable energy used to meet the EO13423 Requirement for new renewable energy must also be consumed, therefore non-electric energy from renewable sources must meet the same qualifications as electricity from renewable energy described in the following paragraphs.

3.1.4 Double Counting

3.1.4.1 Avoiding Double Counting

RECs that count toward the EPACT 2005 and EO13423 Requirements cannot be double counted except under the bonus specified in EPACT 2005 section 203, subsection (c). (42 U.S.C. 15852(c)) The statutory "bonus" is discussed in sections 3.1.4.3 and 3.4 below. It is important to protect the credibility of RECs in the general market where they are traded, and double counting could jeopardize that credibility.

3.1.4.2 Double Counting Defined

Double counting occurs when

- a) more than one party at the same time claims the renewable energy attributes from renewable energy generation (as either RECs or as renewable energy), i.e., the renewable energy is "double sold" to other customers; or
- b) the renewable energy counted toward the agency's goal is also used to meet a renewable portfolio standard or other federal, state, or local regulatory requirement, except for the exemptions provided to projects initiated prior to final publication of this guidance; or
- c) non-energy attributes such as emissions credits/allowances or other environmental attributes are further disaggregated from the renewable attributes by the renewable energy/REC supplier and sold separately.

3.1.4.3. Bonus under Section 203 of EPACT 2005

Section 3.4 of this guidance discusses the bonus credits that are allowed under section 203(c) of EPACT 2005. The bonus allowed by section 203(c) of EPACT 2005 is not considered double counting. The bonus will be implemented by accounting for it in agency reporting. This bonus is specified by law, addresses only accounting internal to the Federal government, and should not negatively impact the general REC market.

The bonus is not available to non-electric renewable energy sources used by agencies to meet the EO13423 Requirement for use of renewable energy generated from new sources.

3.1.5 Including Non-energy Attributes in Renewable Energy and RECs

For Renewable Energy or RECs to count under the EPACT 2005 Requirement or the EO13423 Requirement, both the renewable attributes and the non-energy attributes must be retained by the agency, retired, or precluded from transfer to a third party.

3.2 On-site Renewable Energy Projects, Government-Owned Projects and Distributed Generation

Executive Order 13423 section 2 (b)(ii) requires that to the extent feasible, agencies implement renewable generation projects on agency property for agency use. The instructions for EO13423 include guidance on increasing use of renewable energy in Energy Savings Performance Contracts (ESPCs) and Utility Energy Savings Contracts (UESCs) including bundling measures with short and long-term paybacks to create cost-effective contracts to expand on-site renewable energy projects. Where life-cycle cost effective, each agency shall implement distributed generation systems in new construction or retrofit projects, including renewable systems such as solar electric, solar lighting, geo (or ground coupled) thermal, small wind turbines, as well as other generation systems such as fuel cell, cogeneration, or highly efficient alternatives. In addition, agencies are encouraged to use distributed generation systems when a substantial contribution is made toward enhancing energy reliability or security. More information is available in the March 29 EO13423 instructions at http://www.ofee.gov/eo/eo13423_instructions.pdf.

3.2.1 REC Retention Requirements

It is expected that Federal renewable energy use under EPACT 2005 and EO13423 will result in renewable energy use beyond the existing state renewable portfolio standard (RPS) goals. Any RECs sold or relinquished to meet State RPS goals or corporate renewable energy goals that are not replaced with other RECs do not contribute to the goals established by EPACT 2005 and EO13423. This is to prevent Federal agencies from claiming credit for renewable energy attributes that are also claimed by other parties such as states or corporations (see Section 3.1.4.2). Therefore agencies are required to retain ownership of the RECs from projects in order to count them towards the EPACT 2005 or EO13423 Requirements. These requirements also apply to all sources of RECs, including non-electric renewable energy sources.

Renewable energy from projects built on-site at a Federal facility or owned by a Federal agency but installed on non-Federal land or waterways may qualify to be counted toward the EPACT 2005 or EO13423 Requirements where

- a) (i) the renewable energy is produced and used on-site (i.e., the renewable energy produced by the project is on the facility side of the meter and the power/energy is not sold to others), or

(ii) the renewable energy is produced by a renewable energy project owned by a Federal agency but installed on private land or waterways (for example, off-grid installations that power remote sensing equipment or buoys) and
- b) the renewable energy and non-energy attributes are not sold or otherwise allowed to be transferred from the site.

Retention of a REC that explicitly states that the Federal agency retains or precludes transfer to other parties of all renewable energy and non-energy attributes of the project is the best evidence of meeting this standard.

Existing projects where the agency can show that it uses the energy produced but where there is no agreement or contract that addresses the disposition of the RECs and non-energy attributes of the project shall receive full credit so long as the RECs and/or non-energy attributes are not explicitly sold or transferred in the future. See Section 3.4 for a discussion on how bonuses for these on-site projects are credited and the treatment of RECs from these projects. For non-electric on-site projects, for example thermal projects where there is no market for RECs, a document or clause stating that the Federal agency retains or precludes transfer to other parties of all renewable energy and non-energy attributes of any renewable energy produced by on-site projects is recommended.

3.2.2 REC Trading

The requirement to retain RECs does not preclude trading or swapping RECs. Agencies may arrange for the sale of RECs from on-site renewable projects and arrange for the proceeds to be used to acquire RECs from other locations and/or renewable resources. Agencies may also arrange for direct swaps of RECs with other renewable energy projects. This "REC Swap" option is designed to encourage innovative projects and to improve project cost-effectiveness, while retaining the concept that a specific REC is not double counted, except as specified in EPACT 2005 Section 203 (c). See Section 3.4 for

a discussion on how bonuses for these on-site projects are credited and the treatment of RECs from these projects.

3.2.2.1 REC Swaps Allowed at Agency Level

Swaps may be arranged at the reporting agency level, but must be documented. Swaps will not be allowed between reporting agencies, although agencies may arrange purchases of RECs from each other. This allows an agency to apply RECs purchased from other sources to cover the renewable energy production from any on-site project in the agency even if the RECs from the project were not retained, and to claim any bonus credit available because the project is on Federal or Indian land. For the EPACT 2005 Requirement the RECs an agency receives in a swap or trade must come from qualified renewable energy sources of electricity.

3.2.2.2 REC Swaps and Non-Electric Renewable Energy Sources

To meet the new renewable energy provisions of the EO13423 Requirement agencies may swap RECs from non-electric renewable energy sources. However, non-electric renewable energy sources produced on Federal or Indian lands cannot receive a bonus even if they are swapped or traded for RECs from a renewable source of electricity. RECs for renewable sources of non-electric energy must come from projects placed in service after January 1, 1999, to qualify for the new renewable energy provisions of the EO13423 Requirement, and to be reported as progress toward meeting the EO13423 Requirement.

3.2.2.3 REC Swap Example for Electric Renewable Energy Sources

Under the EPACT 2005 Requirement if an agency has a project that produces 100 MWh of qualified renewable energy on its lands but sold the RECs for the project, it would not receive credit for the 100 MWh produced or the 100 MWh of bonuses for siting the project on Federal lands. However, the agency can purchase 100 MWhs of RECs from other sources of renewable electricity to swap for the RECs it sold. The agency could then count the 100 MWh produced by the project and covered by the purchased RECs and claim the 100 MWh bonus, for a total of 200 MWh, including the RECs. This energy would also count toward the EO13423 Requirement.

3.2.2.4 REC Swap Example for Non-Electric Renewable Energy Sources

Under the EO13423 Requirement, if an agency has a project that produces BTUs, mechanical energy or light that is the equivalent of 100 MWh of qualified renewable energy from a new source of non-electric energy placed in service after January 1, 1999, but sold the RECs for the project, it would not receive credit for the 100 MWh equivalent in meeting the new renewable energy provisions of the EO13423 Requirement. However, the agency can purchase 100 MWhs of RECs from other new renewable sources of electric, mechanical or thermal energy placed in service after January 1, 1999 to swap for the RECs it sold. However, because the original project on Federal lands was a renewable source of non-electric energy, it cannot qualify for any bonus. The most the agency can claim toward meeting the new renewable energy requirement under the EO13423 Requirement is 100 MWh. This provision allows agencies to swap high-value RECs from an agency project for less expensive RECs to help reduce project costs. If the thermal project was placed in service on or before January 1, 1999, it cannot contribute to the EO13423 Requirement at all.

3.2.3 Grandfathering Exemption for Projects Initiated Before Final Publication of This Guidance

As a transition, renewable energy from on-site or government-owned projects initiated before final publication of this guidance will not have to meet the REC retention requirements stated in section 3.2.1, as long as they comply with the other requirements in this guidance. The best proof that a project was initiated prior to the publication of guidance is an issued request for proposal for the project. Projects that can be shown to be part of a documented acquisition plan approved prior to publication of this guidance will also be grandfathered.

Projects initiated prior to final publication of this guidance that will produce and use renewable energy on-site or that are owned by the government are exempted from the REC retention requirement in order to accommodate situations where the agency cannot meet the requirement.

These projects count toward the EPACT 2005 and EO13423 Requirement even if the RECs must be transferred to a state, locality, or utility to obtain support for the project from a renewable portfolio standard or incentive program.

Agencies should make clear in any document concerning RECs from projects initiated before final publication of this guidance, that the RECs cannot be transferred by the agency or utility into the voluntary market beyond the original recipient because their renewable energy and non-energy attributes have already been claimed under the EPACT 2005 Requirement or the EO13423 Requirement.

Projects based on new renewable energy sources of non-electric energy may also be grandfathered under these provisions, but can only be counted toward the EO13423 Requirement.

All Grandfathering exemptions will expire as of September 30, 2011.

3.2.4 On-Site Projects No Longer Restricted by January 1, 1990 Start Date.

EO13423 revoked EO13123 and therefore revoked its accompanying guidance which required that all renewable energy claimed for the Federal renewable energy goal must come from projects built after January 1, 1990. All on-site renewable energy projects that produce electricity can count toward the EPACT 2005 Requirement regardless of their installation date, provided the agency meets the requirements in section 3.1.1 of this guidance and section 2 (b) of EO13423 that directs agencies to meet half of their statutory goal with new renewable resources placed in service after January 1, 1999. See section 3.4 of this guidance for a discussion of how this relates to the bonus for installation on Federal or Indian lands.

For renewable sources of non-electric energy used to meet the EO13423 Requirement, only projects placed in service after January 1, 1999 can be counted.

3.3 Purchases of Renewable Energy/RECs

For purposes of the EPACT 2005 and EO13423 Requirements, purchases of RECs are treated the same as renewable energy purchases. This is an established, standard practice within the private sector. This also means that a REC must be from a qualified renewable source of electricity to count toward the EPACT 2005 Goal. RECs from qualified renewable sources of non-electric energy can only be used to meet the EO13423 Requirement.

3.3.1 Purchases Qualified for Credit

Purchased renewable energy and RECs may only be counted against the EPACT 2005 or EO13423 Requirements when the renewable and non-energy attributes are retained by the agency, retired, or precluded from transfer to a third party. Therefore, agency purchases of renewable energy/RECs should include contract language that explicitly states that the Federal agency retains or precludes transfer to other parties of all renewable energy and non-energy attributes of any renewable energy/RECs that they purchase.

Guidance and sample language regarding this requirement will be updated periodically as industry practice and market conditions change over time and will be available on the FEMP website at <http://www1.eere.energy.gov/femp/about/legislation.html>.

3.3.2 Grandfather Clause for Purchases Before Guidance Issue Date

RECs or renewable energy purchases contracted prior to final publication of this guidance that do not currently meet these requirements, but do comply with the guidance previously provided under Executive Order 13123, are allowed as grandfathered. However, any RECs or renewable energy purchases obtained under a contract following changes to that existing contract other than exercising existing options are not grandfathered and must comply with these requirements to be counted against the EPACT 2005 or EO13423 Requirements.

REC or renewable energy purchases that are acquired through a Request for Proposal (RFP) issued prior to publication of this guidance will also be grandfathered. Projects that can be shown to be part of a documented acquisition plan approved prior to publication of this guidance will also be grandfathered. All Grandfathering exemptions will expire as of September 30, 2011.

Purchases based on new renewable energy sources of non-electric energy may also be grandfathered under these provisions, but can only be counted toward the EO13423 Requirement.

3.3.3 Purchases Not Qualified for Credit

That portion of renewable energy/RECs that is used by another party (including electric service providers who claim ownership of renewable energy attributes to meet renewable portfolio standards), or transferred or sold by the Federal agency to a third party, cannot be counted toward the EPACT 2005 or EO13423 Requirement.

Agencies may not count renewable energy or REC purchases from resources that are included in the utility's normal generation mix. Agencies may not count renewable energy or REC purchases that have been paid for by captive utility ratepayers unless the revenue from the further sale of the renewable energy or RECs is returned to those ratepayers or used for new renewable energy development.

Note that a REC supplier may retire RECs on the Federal government's behalf in those states with REC tracking systems that allow RECs to be retired by the supplier on behalf of the purchaser.

3.3.4 "Vintage" Requirements

RECs purchased for use in a given contract year must meet REC "vintage" requirements, i.e., the energy they represent must be generated during the same

defined contract year. They may also be generated six (6) months immediately preceding each contract year of the period of performance, or three (3) months immediately following each contract year of the period of performance. This is consistent with recommended practice for the EPA Green Power Partnerships.⁹

Guidance and sample language regarding this requirement will be updated periodically as industry practice and market conditions change over time and will be available on the FEMP website at <http://www1.eere.energy.gov/femp/about/legislation.html>.

3.3.5 Third-Party Verification

Requests for Proposals (RFPs) shall include provisions that address the issues discussed in this guidance, and suppliers should certify that their product meets the requirements of this guidance. RFPs shall also include a "Third Party Verification" requirement as described below:

All Federal agency renewable energy/REC RFPs must include Third Party Verification audit requirements for the purchase. The purpose of this requirement is to prevent fraud, to ensure that Federal renewable energy/REC purchases are not double-counted, to ensure that the Federal government receives the renewable energy and non-energy benefits associated with their renewable energy/REC purchases, to ensure that vintage and other requirements of this guidance are met, and to help standardize industry best practices.

Guidance and sample language regarding this requirement will be updated periodically as industry practice and market conditions change over time and will be available on the FEMP website at <http://www1.eere.energy.gov/femp/about/legislation.html>.

3.3.6 Purchases from Federal and Tribal Lands

See Section 3.4 for a discussion on how purchases from Federal land and tribal lands receive a bonus under EPACT 2005.

3.4 Bonuses for Qualifying Renewable Energy

In accord with section 203 (c) of EPACT 2005¹⁰, a bonus equivalent to doubling the amount of renewable energy used or purchased is available if any of the following conditions are met:

- a) the renewable energy is produced and used on-site at a Federal facility;
- b) the renewable energy is produced on Federal lands and used at a Federal facility;
- c) the renewable energy is produced on Indian land as defined in title XXVI of the Energy Policy Act of 1992 (25 U.S.C. 3501 et seq.) and used at a Federal facility;
or¹¹

⁹ More information on vintage requirements and best practices can be found in this document: http://www.epa.gov/greenpower/pdf/gpp_partnership_reqs.pdf

¹⁰ 42 U.S.C. 15825(c) Projects or purchases that qualify for the bonus may report double the renewable energy used or purchased by the Federal agency.

- d) the electricity produced on-site at a Federal facility is sold to a third party, but the power purchase contract explicitly states that the Federal agency retains ownership of the related RECs and non-energy attributes. Moreover, the energy buyer is precluded from representing that such purchased energy is "renewable" for any purpose (e.g., to meet a state renewable portfolio standard, in public disclosure statements, press releases, or bill inserts, etc). All renewable energy and non-energy attributes must be retained by the site.

The bonus is only available to qualified renewable energy sources that produce electricity on Federal or Indian lands. Non-electric energy from renewable sources is not eligible for the bonus.

3.4.1 Bonus Transferability Between Agencies

If one Federal agency transfers the renewable energy and the associated RECs produced on its land to another Federal agency, the purchasing agency may receive double credit for each kWh purchased. The agencies may also negotiate other divisions of the RECs and bonus credits between the agencies, as long as the total does not exceed the amount of renewable energy generated plus the bonus and the division is clearly documented.

3.4.2 Bonus and REC Transfers to Parties Outside the Federal Government

If an agency transfers the RECs for a project that otherwise qualifies for the bonus to a party outside the Federal government, it also gives up its right to count that amount of renewable energy for its goal. It also gives up the right to claim the bonus for the energy and renewable attributes associated with the RECs it sells unless RECs purchased from other sources are used to cover the renewable energy production from the on-site project as referenced in Section 3.2.2.

3.4.3 Bonus Limited to New Renewable Energy Sources

The intent of the bonus is to encourage the development of on-site renewable energy projects. Therefore, this guidance honors that intent by limiting the bonus to new renewable energy projects. To qualify for the bonus, projects and purchases must come from new renewable energy sources placed in service after January 1, 1999. They must also meet the other requirements specified in this guidance. Projects placed in service on or before January 1, 1999 will not receive any bonus.

3.4.4 Bonus Available to Refurbished Facilities

A project originally placed in service on or before January 1, 1999 but that is rebuilt, refurbished or modified significantly – involving greater than 80% of the original equipment or changes that equal 80% or more of the original costs of the facility – will be considered new for purposes of the bonus calculation under EPACT 2005 and the new renewable energy requirement under EO13423.

3.4.5 Bonus Provisions for Projects that Convert Renewable Fuels to Electricity

Projects placed in service after January 1, 1999 that convert renewable fuels into useful electric energy will be considered on-site projects that can qualify for the bonus if the

¹¹ Requirements a), b) and c) are from Section 203 (c) of the Energy Policy Act of 2005, (42 U.S.C. 15825(c)). Item d) addresses a possibility created by this guidance.

primary equipment for converting the fuel to usable energy is located on Federal or Indian lands, even if all or a portion of the fuel is delivered from non-Federal lands.

3.4.6 Bonus Impact on Greenhouse Gas Intensity and Information on Future Guidance

Bonuses for renewable energy generation will not be used in calculating reductions in agency greenhouse gas intensity.

Guidance and sample language regarding this requirement will be updated periodically as industry practice and market conditions change over time and will be available on the FEMP website at <http://www1.eere.energy.gov/femp/about/legislation.html>.

3.5 Encouragement for Long-Term Contracts

Agencies are encouraged to enter into long-term contracts (10 years or longer) for the purchase of renewable energy if the contract directly supports the development of new renewable energy resources.

Where not prohibited by law, agencies are encouraged to enter into long-term power purchase contracts for the supply of renewable energy that meet the requirements below. Such a contract should be for a term of 10 years or longer and substantially contribute to the development, financing, construction, and operation of a new renewable project. In this situation, "substantially" means more than 10 percent of a project or the equivalent of purchasing production of 3 MW of new renewable capacity

3.6 Internal Agency Renewable Energy Goals

The EPACT 2005 and EO13423 Requirements do not preclude agencies from setting more aggressive renewable energy goals for themselves. Federal agencies are encouraged to exceed the EPACT 2005 and EO13423 Requirements and establish higher internal renewable energy goals.

4. Counting Renewable Energy Purchase Goals for Reducing Energy Intensity

During FY 2007, agencies will continue to receive credit toward their energy reduction goal from purchases of qualified electric and non-electric renewable energy sources. From FY 2008 through FY 2011, the credit will gradually be reduced to zero as shown in the table below.

Purchases of renewable energy or Renewable Energy Certificates (RECs) may only contribute up to 60 percent of the annual energy reduction goal for FY 2008, and gradually be reduced to zero by 2012.

Long-term REC purchases of 10 years or more of renewable energy that contribute to the development of new renewable energy resources may only contribute up to 80 percent of the annual energy reduction goal for FY 2008 and gradually be reduced to zero in 2012, as shown in the table below.

| Fiscal Year | Energy Reduction Goal | Maximum Contribution of Renewable Energy and REC Purchases toward Energy Goal | Maximum Contribution of <u>Long-Term</u> Renewable Energy and REC Purchases toward Energy Goal [*] |
|-------------|-----------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 2003 | Base Year | RECs and purchases not applied in Base Year | RECs and purchases not applied in Base Year |
| 2007 | 4% | No limit | Not applicable |
| 2008 | 9% | 5.4% | 7.2% |
| 2009 | 12% | 4.8% | 7.2% |
| 2010 | 15% | 3.0% | 6.0% |
| 2011 | 18% | 1.8% | 3.6% |
| 2012 | 21% | 0.0% | 0.0% |

^{*}The combined total of both regular and long-term renewable purchases may not contribute more than the percentages shown in column 4 above.

Agencies will continue to receive appropriate credit for reducing greenhouse gas emissions for all the renewable energy they use.

The phase out for counting renewable energy and REC purchases toward energy intensity goals does not impact how agencies count these purchases toward renewable energy goals.

5. Reporting

In accordance with Section 203(d) of EPACT 2005, the Secretary of Energy shall provide a report to Congress on the progress of the Federal Government in meeting the goals established by Section 203. (42 U.S.C. 15825(d)) To facilitate the development of this report, agencies will annually submit a report to the Department of Energy detailing their progress toward meeting the EPACT 2005 and EO13423 Requirements as part of their regular annual energy data reporting. For the purposes of reporting energy reduction goal progress, agencies should refer to DOE's reporting guidance for the Annual Report on Federal Government Energy Management (www.eere.energy.gov/femp/about/reporting_guidance.html). This guidance has been updated to reflect reporting requirements for FY 2007 and in subsequent years will reflect the provisions for phasing out the renewable energy credit toward energy intensity goals.

Renewable sources of non-electric energy are included in calculating progress toward the EO13423 Requirement for new renewable energy sources, but the EPACT 2005 Requirement specifies renewable electricity in the statutory language. Therefore, progress in expanding renewable energy use will be reported without non-electric sources of renewable energy for the EPACT 2005 Requirement. For the EO13423 Requirement non-electric renewable energy will be counted by converting to kilowatt-hours (kWh) using methods explained and updated in DOE's reporting guidance for the Annual Report on Federal Government Energy Management (www.eere.energy.gov/femp/about/reporting_guidance.html).

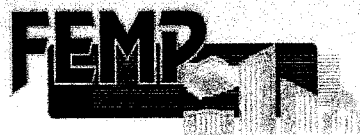
Agencies may, for a variety of reasons, have renewable projects or purchases that do not meet the requirements of this guidance, including non-electric renewable energy. Agencies are encouraged to include a section in their reports under this guidance describing the actions they have taken to promote renewable energy production beyond those accounted for under this guidance. FEMP will work with the agencies to develop consistent formats and methods for reporting.

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

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ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION

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SUSAN BITTER SMITH

2013 APR 24 A 9 14

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY'S REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE ENERGY
ADJUSTOR.

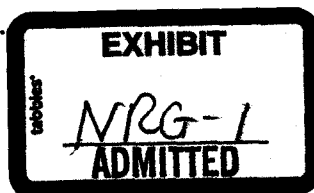
DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF ITS
2013 RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

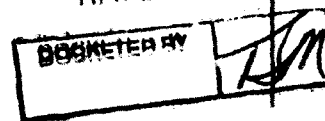
DOCKET NO. E-04204A-12-0297

**NRG SOLAR
NOTICE OF FILING TESTIMONY**

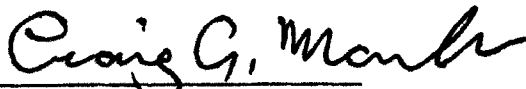
- 1 NRG Solar LLC ("NRG Solar") hereby provides notice of filing the Direct Testimony of
2 Diane Fellman in the above-captioned case.



Arizona Corporation Commission
DOCKETED
APR 24 2013



1 RESPECTFULLY SUBMITTED on April 24, 2013.

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15 **Original and 13 copies filed**
16 **on April 24, 2013 with:**

17
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19 Arizona Corporation Commission
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23 **Copy of the foregoing mailed**
24 **on April 24, 2013, to:**
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BEFORE THE ARIZONA CORPORATION COMMISSION

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BOB STUMP, Chairman
GARY PIERCE
BRENDA BURNS
ROBERT BURNS
SUSAN BITTER SMITH

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY'S REQUEST FOR
APPROVAL OF UPDATED GREEN POWER
RATE SCHEDULE GPS-1, GPS-2, AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
FOR RESET OF RENEWABLE ENERGY
ADJUSTOR.

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE
ENERGY STANDARD IMPLEMENTATION
PLAN AND DISTRIBUTED ENERGY
ADMINISTRATIVE PLAN AND REQUEST
FOR RESET OF ITS RENEWABLE ENERGY
ADJUSTOR.

DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR APPROVAL OF ITS
2013 RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-04204A-12-0297

DIRECT TESTIMONY
OF
DIANE FELLMAN
ON BEHALF ON NRG SOLAR LLC
DATED APRIL 24, 2013

1
2
3
4
5

1 **L. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND TELEPHONE**
3 **NUMBER.**

4 A. My name is Diane I. Fellman. My business address is 5790 Fleet Street, Suite 200,
5 Carlsbad, California 92008, and my business phone is (415) 665-3824.

6 **Q. WHAT IS YOUR PROFESSIONAL EXPERIENCE?**

7 A. I have been engaged in the energy industry since 1972 when I began as a legal intern at
8 the Ohio Power Siting Commission. Starting in 1975 until 1983, I served as an
9 Administrative Law Judge there and then at the California Energy Commission, where I
10 also was Office Manager of Demand Forecasting. From 1983 to 1986, I served as staff
11 counsel at the California Public Utilities Commission. Following my departure from
12 public service, I represented a number of energy clients before various California state
13 agencies and Legislature for 18 years in a private law practice. In 2004, I joined NextEra
14 Energy Resources as a Director of Regulatory and Governmental Affairs. Since joining
15 NRG Energy in 2010, I have served in the same capacity.

16 **Q. WHAT IS YOUR EDUCATIONAL EXPERIENCE?**

17 A. I obtained my BA in Political Science from Ohio State University (1972) and my JD
18 from the University of Cincinnati (1975).

19 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

20 A. NRG Solar LLC ("NRG").

21 **Q. WHAT IS NRG SOLAR LLC?**

22 A. NRG Solar, LLC is a subsidiary of NRG Energy, Inc., the largest independent power
23 producer in the United States. NRG Solar is one of the largest solar companies in the
24 nation, with approximately 2,000 MW of projects in operation and development, which
25 range from large-scale utility photovoltaic and thermal to distributed generation.

1 **II. PURPOSE OF TESTIMONY**

2 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

3 **A.** My testimony spells out NRG's position on the proposed "Track and Record"
4 mechanism as the means for APS, TEP, and UNS Electric ("the utilities") to achieve
5 compliance with their Distributed Energy ("DE") requirement (both residential and
6 nonresidential portions) under the Arizona Corporation Commission's ("Commission")
7 Renewable Energy Standard ("RES") Rules in the absence of paying cash incentives. My
8 testimony will recommend that the Commission adopt the following positions: 1)
9 Renewable Energy Credit ("REC") ownership must be preserved for customers wherein
10 no compensation is paid by the utility; 2) the integrity of RECs must be maintained for
11 use by the owners to the purpose of meeting green certification or voluntary sustainability
12 goals without a secondary use that could lead to double counting; and 3) the DE
13 requirement of the RES Rules (A.C.C. R14-2-1805) should be retained.

14 **Q. WHY DOES NRG CARE ABOUT THE ARIZONA RES RULES AND THE**
15 **UTILITIES' PROPOSED CHANGES?**

16 **A.** In Arizona, NRG Solar is the majority owner of the Agua Caliente Solar Project (292
17 MW) near Yuma and the 100% owner of the Avra Valley Solar Project (25 MW) near
18 Tucson. In addition, NRG Solar is invested in many distributed generation projects at
19 various school districts and at Arizona State University ("ASU"). ASU has stated its
20 commitment to the further development of solar whether the Commission continues cash
21 incentives or not. In the absence of cash incentives, it is critical for solar developers to
22 have the ability to retain their REC property rights. Without these rights, the market
23 opportunities for further solar development outside of the Commission mandated RES
24 program would be diminished, if not eliminated.

25 **Q. ARE YOU TESTIFYING CONCERNING PROPOSED CHANGES TO THE**
26 **RESIDENTIAL DISTRIBUTED ENERGY MARKET?**

1 A. No. NRG does not currently participate in the residential DE market in Arizona.

2 **III. DIRECT TESTIMONY**

3 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

4 A: First, customers should be able to retain their REC ownership where the utilities do not
5 provide cash incentives. Second, the Commission should reject the utilities' proposal to
6 issue a temporary waiver from the DE requirement and then make a permanent change to
7 the RES Rules by eliminating the DE requirement altogether. Third, in this era of DE
8 over-compliance by the utilities, there is no compelling reason (a) to allow the utilities to
9 report, even for informational purposes, the energy produced by DE systems that do not
10 receive compensation for RECs or (b) to alter the Commission's sound policy that the
11 utilities obtain renewable energy from a combination of utility scale and distributed
12 generation projects rather than just from utility scale projects.

13 **Q. THE UTILITIES FORECAST THAT THEY WILL BE EXCEEDING THE DE**
14 **REQUIREMENTS SET FORTH IN THE RES RULES. DO YOU AGREE?**

15 A. Yes, but only in the short run. In order to meet the annual DE requirements, the utilities
16 implemented a competitive process that attracted the most cost-effective projects. The
17 inherent competitive nature of this procurement model has been overwhelmingly
18 successful in driving down cash incentives, so much so that in January 2013, the
19 Commission decided that it was no longer necessary to provide performance based
20 incentives ("PBI"s) for nonresidential distributed solar projects. Even in the wake of
21 declining cash DE incentives, customer participation has been robust to the point that the
22 utilities have over-complied with the DE requirement. Even though the PBI levels have
23 fallen so dramatically over the last few years, the utilities have stated publicly and
24 reported in their 2012 Annual REST Compliance filings and 2013 REST Implementation
25 Plans that they have exceeded compliance in the nonresidential DE carve-out requirement
26 through 2019.

1 **Q. GIVEN THE FORECASTED OVER-COMPLIANCE, DOES THE COMMISSION**
2 **NEED TO ALTER THE RES RULES?**

3 **A.** No. The utilities requested that the Commission eliminate the DE requirement altogether
4 because it is an "arbitrary benchmark," and they should not be held to a requirement in
5 which they do not participate in the decision-making process. While it is true that
6 utilities have no ability to drive customer behavior in the present and the future, relieving
7 them from the DE requirement would undermine the Commission's policy for utilities to
8 achieve the overall RES with a mixture of utility-scale and distributed generation
9 projects. The underlying objective of the Commission is to allow the utilities' customers
10 to participate directly in the RES program by installing solar systems on their own
11 homes, businesses, and schools. Removing the DE requirement would upend this policy
12 objective and deny customers the opportunity to assist their utilities in meeting the DE
13 carve-out of the RES. The 15% RES, of which the utilities must derive 30% from DE
14 applications, must be achieved by 2025. It is a long-term goal, and with 12 years left,
15 making this type of substantial change to a key marker would be shortsighted and send
16 the wrong message to the utilities' customers that their contribution of installing rooftop
17 solar is not important to meeting the RES.

18 **Q. WHO SHOULD OWN RECS?**

19 **A.** Unless they are purchased by the utility, RECs should be retained by the customer or the
20 entity leasing the solar system or entering into a PPA for the solar system, depending on
21 the particular contractual arrangement. NRG conducts business with various large
22 commercial entities and federal agencies that have their own sustainability goals. In most
23 cases, these goals require that all the REC attributes from installed DE systems be
24 bundled with the energy as part of the transaction. Fair compensation must be paid to the
25 owner of the DE system if the utilities want to count the energy produced by customers'
26 distributed solar systems for either compliance or informational purposes. Otherwise, the

1 owners of such systems, either NRG or its nonresidential customers, should retain the
2 REC ownership, with the utilities receiving no "credit" from that production either
3 through a reduction in RPS compliance or in the load required to measure that
4 compliance.

5 **Q. WHAT IS NRG'S RESPONSE TO THE UTILITIES' TESTIMONY**
6 **CONCERNING GREEN CERTIFICATION?**

7 A. NRG agrees with APS that various green certification organizations (including the Center
8 of Resource Solutions and the Western Renewable Energy Generations Information
9 System) and various federal agencies (including the Department of Defense) would
10 construe the original "Track and Record" proposal as the double counting of RECs.
11 These entities require that all RECs tracked under an independent REC certification
12 system or the federal rules governing EPC Act 2005 and Executive Order 13423 be bundled
13 and not have their attributes counted or claimed elsewhere to meet another renewable
14 portfolio standard. However, absent a clear change in the definition of RECs (A.C.C.
15 R14-2-1803), APS's revised proposal would appear, on its face, to double-count the
16 RECs.

17 **Q. HOW WOULD APS' REVISED PROPOSAL DOUBLE-COUNT RECS?**

18 A. Energy produced from those DE systems that did not receive cash incentives would be
19 reported to the Commission for informational purposes. The REC certification
20 organizations and various federal agencies may consider the revised proposal to be
21 double counting because the REC energy would also be reported to the Commission and
22 potentially used for a secondary purpose. NRG is not sure why reporting this energy to
23 the Commission is necessary or relevant when the utilities are proposing that the
24 Commission eliminate the DE carve-out requirement. It is confusing and potentially
25 misleading.

1 **Q. DO YOU AGREE WITH TEP'S AND UNS ELECTRIC'S SUGGESTION THAT**
2 **NET METERING AND "TRACK AND REDUCE" WOULD COMPENSATE FOR**
3 **THE UTILITIES' RECEIVING RECS?**

4 **A.** Absolutely not. First, the utility should not receive all RECs in exchange where a small
5 portion of the power transmitted by the DE system is delivered to the transmission or
6 distribution system. The issue of net metering is unrelated to the purchase of RECs by
7 the utilities to comply with annual RES requirements through the payment of cash
8 compensation (i.e., upfront incentives or PBIs). Second, the application of the "Track
9 and Reduce" option would compromise the utilities' annual RES compliance requirement
10 where customers would retain the RECs from their DE systems and the utilities would
11 then reduce their retail kWh sales by the same amount.

12 **Q. WOULD APS' PROPOSAL REQUIRE A RULE CHANGE?**

13 **A.** Yes. The RES Rules specifically state that the utilities must acquire RECs, which are
14 directly derived from actual kWh energy production from an Eligible Renewable Energy
15 Resource. A conflict exists and would have to be addressed through a rule change.

16 **Q. SHOULD THE RES RULES BE WAIVED OR CHANGED?**

17 **A.** No. NRG does not support a temporary waiver from the DE requirement or a permanent
18 change in the RES Rules that would eliminate the DE carve-out requirement. There is no
19 urgent need to address a non-existent problem. By the utilities' own admission,
20 complying with the DE requirement will not become an issue for them until 2015 for
21 residential systems and 2019 for nonresidential systems.

22 **Q. DOES NRG SUPPORT ANY PORTION OF THE UTILITIES' PROPOSALS?**

23 **A.** Yes. NRG supports part of APS's revised proposal that allows customers to retain their
24 RECs in the absence of receiving compensation. However, NRG opposes the remaining

1 parts of APS's proposal – the imposition of a DE energy tracker for informational
2 purposes and the elimination of the DE requirement of the RES Rules.

3 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

4 **A. Yes.**

ORIGINAL

BEFORE THE ARIZONA CORPORATION

COMMISSIONERS

BOB STUMP, Chairman
GARY PIERCE
BRENDA BURNS
ROBERT BURNS
SUSAN BITTER SMITH

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ARIZONA CORPORATION
SECRET CONTROL

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY'S REQUEST FOR
APPROVAL OF UPDATED GREEN POWER RATE
SCHEDULE GPS-1, GPS-2, AND GPS-3.

DOCKET NO. E-01345A-10-0394

IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION FOR RESET OF
RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-01345A-12-0290

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
APPROVAL OF ITS 2013 RENEWABLE ENERGY
STANDARD IMPLEMENTATION PLAN AND
DISTRIBUTED ENERGY ADMINISTRATIVE
PLAN AND REQUEST FOR RESET OF ITS
RENEWABLE ENERGY ADJUSTOR.

DOCKET NO. E-01933A-12-0296

IN THE MATTER OF THE APPLICATION OF UNS
ELECTRIC, INC. FOR APPROVAL OF ITS 2013
RENEWABLE ENERGY STANDARD
IMPLEMENTATION PLAN AND DISTRIBUTED
ENERGY ADMINISTRATIVE PLAN AND
REQUEST FOR RESET OF ITS RENEWABLE
ENERGY ADJUSTOR.

DOCKET NO. E-04204A-12-0297

**NRG SOLAR
NOTICE OF FILING
SURREBUTTAL TESTIMONY**

NRG Solar LLC ("NRG Solar") hereby provides notice of filing the Surrebuttal
Testimony of Diane Fellman in the above-captioned case.


RESPECTFULLY SUBMITTED on May 22, 2013.

Arizona Corporation Commission

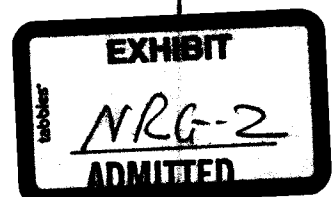
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MAY 22 2013





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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP, Chairman
GARY PIERCE
BRENDA BURNS
ROBERT BURNS
SUSAN BITTER SMITH

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| IN THE MATTER OF ARIZONA PUBLIC SERVICE COMPANY'S REQUEST FOR APPROVAL OF UPDATED GREEN POWER RATE SCHEDULE GPS-1, GPS-2, AND GPS-3. | DOCKET NO. E-01345A-10-0394 |
| IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL OF ITS 2013 RENEWABLE ENERGY STANDARD IMPLEMENTATION FOR RESET OF RENEWABLE ENERGY ADJUSTOR. | DOCKET NO. E-01345A-12-0290 |
| IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2013 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN AND DISTRIBUTED ENERGY ADMINISTRATIVE PLAN AND REQUEST FOR RESET OF ITS RENEWABLE ENERGY ADJUSTOR. | DOCKET NO. E-01933A-12-0296 |
| IN THE MATTER OF THE APPLICATION OF UNS ELECTRIC, INC. FOR APPROVAL OF ITS 2013 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN AND DISTRIBUTED ENERGY ADMINISTRATIVE PLAN AND REQUEST FOR RESET OF ITS RENEWABLE ENERGY ADJUSTOR. | DOCKET NO. E-04204A-12-0297 |

**SURREBUTTAL TESTIMONY
OF
DIANE FELLMAN
ON BEHALF ON NRG SOLAR LLC
DATED MAY 22, 2013**

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5

1
2 **Q. HAVE YOU REVIEWED THE REBUTTAL TESTIMONY SUBMITTED BY THE**
3 **PARTIES ON MAY 8?**

4 A. Yes. My surrebuttal testimony will respond to specific proposals and comments.

5 **Q. WHAT IS YOUR ASSESSMENT OF STAFF'S TRACK AND MONITOR**
6 **PROPOSAL?**

7 A. This proposal from Staff is really just a variation of the Track and Reduce proposal
8 contained in TEP's Direct Testimony. NRG does not support either TEP's Track and
9 Reduce proposal or Staff's Track and Monitor proposal. Like TEP's Track and Reduce
10 proposal, Staff's proposal appears to double-count the RECs, which would potentially
11 preclude REC owners from qualifying for independent green certification or meeting
12 their own sustainability goals.

13 **Q. HOW WOULD STAFF'S PROPOSAL DOUBLE COUNT RECS?**

14 A. The RES Rules convert kWhs into RECs on a one-for-one basis and Staff's proposal
15 would reduce the RES requirement, on a kWh per kWh basis, for each utility from all DE
16 systems where no REC transfer occurred. This would appear to double count the RECs,
17 albeit in a negative direction against the DE requirement.

18 Although Staff and TEP believe that Track and Monitor alleviates the intervenors'
19 concern to preserve the value and ownership of RECs, the RES Rules still remain an
20 obstacle for implementing this policy change due to the way RECs are defined.
21 According to The Center for Resource Solutions, RECs or renewable energy can be used
22 only once by a party and another party cannot claim those same RECs or other attributes
23 for Green-e Energy certification.¹ In addition, the sustainability programs of various
24 federal agencies and many companies have the same REC guidelines.

¹ Center for Resource Solutions, *Green-e Energy, National Standard Version 2.3*, at p. 9; http://www.green-e.org/docs/energy/Appendix%20D_Green-e%20Energy%20National%20Standard.pdf

1 **Q. IS IT NECESSARY TO IMPLEMENT THE TRACK AND MONITOR**
2 **PROPOSAL AT THIS TIME?**

3 A. No. As I stated in my direct testimony, the utilities have commitments that exceed
4 compliance levels for both the residential (through 2015) and non-residential (through
5 2019) DE market segments. The Commission needs sufficient time to craft an acceptable
6 long-term solution that ensures not only the property rights of REC owners but also the
7 integrity of RECs.

8 **Q. IS A CHANGE IN THE RES RULES NECESSARY IN ORDER TO ACHIEVE A**
9 **LONG-TERM SOLUTION?**

10 A. Yes. The Commission should institute a new methodology to track compliance with
11 aggregate and annual RES compliance.

12 **Q. DO YOU HAVE A SUGGESTION REGARDING THE NEW METHODOLOGY**
13 **TO TRACK RES COMPLIANCE?**

14 A. Not at this time. The parties should collaborate to develop an acceptable policy that
15 retains the value and property rights of RECs.

16 **Q. HAVE YOU CHANGED YOUR POSITION CONCERNING WHETHER THE**
17 **COMMISSION SHOULD GRANT A TEMPORARY WAIVER FROM THE DE**
18 **REQUIREMENT?**

19 A. Yes. After reading the rebuttal testimony submitted by SEIA and Wal-Mart, NRG now
20 believes it may be helpful for the Commission to grant the utilities a temporary waiver
21 from the DE requirement. This will provide sufficient time for the parties to design an
22 acceptable policy that preserves the value and ownership of RECs.

23 **Q. WHAT IS YOUR RECOMMENDATION TO ADDRESS STAFF'S CONCERN**
24 **THAT THE COMMISSION SHOULD BE AWARE OF ALL DE ENERGY**
25 **PRODUCTION DURING THE PERIOD OF A TEMPORARY WAIVER?**

1 A. One solution would be for the Commission to collect the energy production data from
2 those DE systems that are interconnected to the grid, but receive no cash incentives or
3 compensation for REC transfers. This approach would provide the Commission with a
4 complete picture of how much renewable energy is being produced from all
5 interconnected DE systems. This information would be used strictly by the Commission
6 for informational purposes only, not for the utilities' compliance with the RES Rules. In
7 other words, the utilities would not receive any "credit" from that production, either
8 through a reduction in their DE compliance or for the load required to measure that DE
9 compliance.

10 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

11 A. Yes.